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REYNOLDS

1950

A DIAGNOSTIC STUDY FOR THE CORRECTION OF SPEECH DEFECTS FOUND IN THE COLORED ELEMENTARY SCHOOL OF LA MARQUE, TEXAS

By

Leatha M. Brown Reynolds 37

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Dedicated to my family

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CHAPTER I

INTRODUCTION

Speech is the most vital means of communication, by far the most important tool of thought by which our ideas and personality are expressed. Speech is not taken for granted, today, because it has been shown how inhumane it is to neglect children with defective speech. It is evident that, for all children, handicapped or not, there is little that is given them that can enrich their lives more fully than clear, effective, pleasant speech. Today, a person's inability to speak is a great handicap. Fay Adams[1] relates:

> While good speech has special value to the group as a whole in providing a medium for understanding and cooperation, it has particular value for the individual in helping him establish his status in the group; often the individual who expresses himself easily and well gains a sense of security and recognition which increases his personal adjustment.

There are times when a pupil is not able to express himself as convincingly even though he is equally as intelligent as others. The pupil's performance in the classroom, on the playground, on the street, at social gatherings and even at home determines his success or failure upon his ability to present ideas quickly and with ease. This also determines whether he will be a follower or leader of his group.

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[1] Fay Adams, Educating America's Children, p. 326.

The spoken word remains for the majority of Americans, the principal channel of receiving and giving information and exchanging ideas and feelings. It has been estimated that speech is the basis of 90 per cent of all communication, leaving 10 per cent for writing and reading.[1] By this it can be seen that speech should demand a greater share of attention in the school curriculum.

Blanton[2] has revealed that the most vitally important years for the training of speech are the first five years of life, during the period in which the child is learning to talk. As the child grows older, habits become set in the speech mechanism, and the possibilities of good results decrease, but, since growth ceases only with death, even the adult is not hopeless of modification.

Statement of Purpose

Listening to the children speak in the classrooms, and on the playground, revealed that there were pupils with defective speech in the colored elementary school of La Marque, Texas. It was disclosed that these pupils were at a disadvantage with their playmates.

As a result of this observation these questions have arisen:

1. What are the causes of these speech defects?

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[1] Lorna S. Warner, Speech in the Elementary School. p. 5.

[2] Margaret G. Blanton, Speech Training for Children, p. 20

2. Can the correction of speech defects be handled in the classroom?

3. Is it possible to correct these speech defects found in the pupils' speech?

4. What kind of remedial program should be administered?

The Purpose of the Study

The purpose of this research was to make a survey of all the speech disorders common to the pupils in the colored elementary school of La Marque, Texas, and to set up a remedial class in which help could be given to improve their speech. As a result, it was hoped that a need would be felt to include a speech correction program in the school curriculum.

Let it not be said of the pupils in the La Marque colored elementary school as Pflaum[1] states in his article:

> Freedom of speech-that great American right-may be denied, not only because of politics or lack of democracy, but denied because these children will not be capable of speaking. Stuttering, lisping, and the many other common forms of defective speech will rob them of a chance to use free and easy vocal communication which normal persons enjoy.

According to the reports from all of the speech clinics in our country, conditions due to the war, such as, lack of proper care of the children by people with whom they were left while the mothers worked, inadequate

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[1] George R. R. Pflaum, "Let Them Speak," Texas Outlook, (June, 1947), p. 9.

prenatal care and improper living conditions have increased the number of patients with speech defects.[1]

The effect of the war is reflected also in the lives of the people in La Marque, Texas. Since this community is located in the center of an industrial region, there is a continual stream of transient workers with their families coming in. La Marque is a small community, though steadily growing, but not fast enough to provide adequate accomodations for the people has forced many to live in sub-standard conditions. The effect is seen and shown in the school by an increased number of handicapped children of which speech has its share. So for this reason, a speech correction program is needed in the school.

Source of Data

The material in this study has been gathered from teachers, nurses, doctors, authorities in the field of speech, books, bulletins, magazines and newspapers.

Delimitations

Since there had never been a speech correction program in the school, a survey was made to determine how many students had defective speech in the first six grades of La Marque colored school. A remedial program was set up for these pupils who seemed to have been handicapped by speech.

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[1] Ibid., p. 9

Methods of Procedure

Nine aspects of procedure were considered: (1) locating the pupil with a defect in speech, (2) analyzing and diagnosing the defect, (3) reporting, (4) preparing a schedule, (5) contacting parents, (6) planning instruction, (7) grouping for instrucion, (8) securing aid and information, and (9) keeping records.

Definitions

"Speech" may be considered a handicap when it attracts unfavorable attention, or, is not understandable.[1]

"Speech correction" includes examining, diagnosing, and administering remedial instruction to children or adults who have speech defects.[2]

Related Studies

A school was conducted in 1889 in Zurich, England, for pupils having defective speech. The school lasted only three weeks but in that short time some of the pupils improved.[3]

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[1] State Department of Education, Special Education for Exceptional Children in Texas, Austin, Texas, 1948, p. 85.

[2] Wendell Johnson et. al., Speech Handicapped School Children, p. 10.

[3] Ira Corine Henry, "A Study of Speech Defects in the Weldon High School, Gladewater, Texas, with Suggestions for Improvements," Unpublished Master's thesis, Prairie View State College, Prairie View, Texas, 1947.

In 1937, Cunningham[1] made a study of three small children who had speech defects. After giving remedial treatment to each, one was completely cured of lisping and another of tongue-tiedness.

Singleton[2] made a study of speech disorders of the pupils in the first grade of Washington High School, Wichita Falls, Texas, in 1939. Her experiment lasted one year. The children improved in reading, memorized as many as twenty poems, and their functional defects decreased at least 70 per cent.

Henry[3] made a study of the speech disorders of twenty-one pupils in the first three grades. Remedial treatment was administered for four and one-half months. Eight were cured, twelve improved, and only one made no improvement. This study was made in 1947.

In several of the more progressive states, programs have been established for speech correction in the public school. The New York City Schools have a city-wide system under the jurisdiction of a supervisor of speech improvement. The State of California has a state-wide system of

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[1] Irene Dixon Cunningham, "Remedial Measures in Three Cases of Speech Improvement," Investigative Paper, for the Bachelor's degree, Prairie View College, Prairie View, Texas, 1937.

[2] Ora L. Singleton, "Speech Defects in the First Grade of Washington High School, Wichita Falls, Texas," Investigative Paper, for Bachelor's degree, Prairie View College, Prairie View, Texas, 1939.

[3] Ira Corina Henry, op. cit.

speech correction which is a part of the program of the State Department of Public Instruction. Wisconsin and Minnesota have state systems which through supervisors and traveling clinicians reach even rural school children. The state of Missouri has employed a speech correction supervisor in its office of education and has inaugurated a state program of speech correction. Illinois has a state law establishing state aid for the development of speech and hearing rehabilitation which is administered under the Division of Service of Crippled Children of the State Department of Public Instruction. Oregon and Washington have laws providing state aid for the salary of the speech correction teachers in public schools. Ohio has just enacted a similar law. Nebraska has not done as much as the other states mentioned. Only Omaha provides a correction program through the public schools.[1]

Birmingham[2] is the only public school system in Alabama employing a speech correctionist.

In Georgia,[3] there is a speech correction program in five school systems.

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[1] Nebraska State Department of Public Instruction, Special Education Meeting the Needs of Handicapped Children in Nebraska, 1947, p. 43.

[2] Mary E. Compton, "The Status of Speech Correction in Alabama," Quarterly Journal of Speech, (February, 1949), p. 61.

[3] Louise Davison, "Speech Correction in the Public Schools of Georgia," Quarterly Journal of Speech, (February, 1949), p. 63.

There are only five speech therapists in the public schools of Texas who have met the requirements for final approval.[1]

[1] Texas State Department of Education, op. cit., p. 85.

CHAPTER II

THE SPEECH MECHANISM, AND THE CAUSES OF THE COMMON TYPES OF SPEECH DEFECTS

Speech is the youngest of man's skills. As the early people developed from primitive forms and began to have a larger and more complicated nervous system, new abilities were acquired. The sense organs became specialized in their functions and such complicated reactions: as standing upright, walking and using hands for grasping, became useful to primitive man. Much more recent has been the use of words supplanting acts to help man in his surroundings. Since speech was the last skill acquired, it is the first thing to go when the human organizm is under attack. That is why when one is terribly frightened, he becomes speechless first and only with added fright does he become motionless.[1]

Speech Mechanism

Speech is a skill that must be acquired. No one is born talking and understanding words. Man has no physical units of any kind to serve primarily as speech organs. Speech has borrowed and uses for its purposes, structures that have more vital purposes in connection with the ordinary life processes of breathing, eating and drinking.

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[1] Edwin M. Cole, "Language Problems in Children," Hygeia, Vol. 21, (1943), p. 16.

Under certain conditions speech is at a disadvantage. This could be understood if a person attempted to carry on a conversation while lifting a heavy desk. Assisting and maintaining breath pressure in the chest cavity during the act of lifting or similar types of muscular exertion, is an important function of the vocal cords. Another function of the vocal cords is to keep foreign material out of the lungs. That is why one cannot speak and swallow at the same time. During swallowing, the vocal cords come together and thus keep liquid or food being swallowed from going down the "wind pipe" or trachea.

What is true in this sense of the vocal cords is true also of the organs of breathing, the lungs, diaphragm, muscles of the walls, and nasal passages. Breathing and the vitalizing functions which it serves are more important than talking, so far as the life processes of the human body are concerned. This explains why one is hardly able to talk while sneezing, yawning, sighing, gasping for air, or breathing deeply as a result of vigorous exercise.

Moreover, the lips, tongue, teeth, cheek muscles, soft and hard palate, and muscles of the throat were not designed primarily for speaking. They are used only for speaking when they are not otherwise engaged. [1]

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[1] Wendell Johnson, Spencer F. Brown, James F. Curtis, Clarence W. Edney, Jacqueline Keaster, Speech Handicapped School Children, p. 23.

Monroe[1] divides the speech mechanism into four parts: the motor, the vibrator, the resonators and the modifiers.

The motor is a pump for compressing air. It consists of: (a) lungs, which contain space; (b) the bronchial tubes, which converge into the trachea, thus forming a nozzle out of which the compressed air is released; (c) the ribs and other bones, cartilages, and tissues, which serve to hold the motor in place and give leverage for the application of power; and (d) the muscles, which alternately expand and contract the space occupied by the lungs and to compress it for expulsion afterwards.

The vibrating unit lies within the "Adam's Apple" or the larynx. The larynx is formed of nine cartilages so placed and constructed as to aid in vocal sound production. Strung across the cavity of the larynx are the vocal cords or two white bands. Between the vocal cords is an opening called the glottis. The degree of the opening of the glottis and the varying tensity of the vocal cords are controlled by muscles. The vocal cords can be slackened and in this way the pitch of the voice, highness or lowness of tone, can be changed. When the vocal cords are close together and the air goes through with sufficient force, they vibrate. The sound thus produced by their vi-

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[1] Alan Monroe, Principles and Types of Speech, p. 36.

bration is called voice.[1]

The upper part of the larynx, the "throat" or pharynx, and the nasal cavities, including the sinuses and the mouth, serve as the resonators or amplifiers of the human speech instrument. These organs act much like the resonating parts of musical instruments do; they amplify the sound, making it louder; they modify its quality, making it rich and mellow, harsh or whining.[2] The voice apparatus in many ways does resemble a musical instrument such as a trumpet. A musician playing a trumpet forces breath between his lips which are pressed against the mouth piece of the instrument. The moving air causes the lips to vibrate, and the vibrations produce a tone which is amplified and is given color by the form and material of the instrument. The vibrating lips of the trumpet player are comparable to the vibrating vocal cords of the larynx. The tube of the instrument is comparable to the upper throat and mouth, and its bellmouth to the mouth and nasal cavities through which vocal sound is delivered.[3]

The modifiers are the tongue, lips, teeth, jaws, and palate. The mouth and nose cavities are separated from each other by a horizontal partition. The rearward por-

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[1] Bulletin of the California State Department of Education, Speech Correction in the Elementary School, Vol. 17, (March, 1948), p. 1.

[2] Alan Monroe, op. cit., p. 37.

[3] Sonotone Corporation, How to Improve Your Speech, p. 23.

tion of this partition which is composed of muscles and is named the soft palate. The forward portion, generally thought of as the "roof of the mouth," is of cartilage and is named the hard palate. These modifiers form the movable boundaries of the resonators. Their other function is the formation of consonantal sounds; the stops, hisses, and other interruptions to the steady flow of vowel tone which make an important part of the spoken language.[1]

There are certain parts of the brain that must be active in order for us to talk and understand words. These areas are in the dominant cerebral hemisphere. This is the hemisphere that controls our preferred hand, eye and foot. The average right handed person will talk, read and understand with the left side of his brain. It can be concluded that when one part of the language process such as speech is affected, the ability to understand words written also, is somewhat affected. If a person has a brain injury with a loss of a portion of language, restoration may take place by associating the activity of other parts of the brain involved in language with the part which is lost. For instance, if a person has a shock and loses the power of speech, he may be re-educated to talk by practicing through reading, writing and having words said to him.[2]

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[1] Alan Monroe, op. cit., p. 38.

[2] Edwin M. Cole, op. cit., p. 302.

Sometimes children have perfectly good brain as far as intelligence is concerned, good nerve control and good sense organs. They are normal in every way except they talk poorly. This may be due to heredity. In families where some ancestors have dominance in the right side, and some in the left side, language skills are apt to be acquired with considerable difficulty. These may be shown in three ways: first, the child who talks late; second, the child who stutters; and third, the child who has a reading disability.

Types of Speech Disorders

In time of emergency and hardship, a nation becomes keenly conscious of its handicapped. Because at that time their help is needed as in time of war, or their own need for help becomes sharply clear, as was true during the long depression. As the handicapped began to be noticed, there was a strong tendency on the part of educators, psychologists, and those workers specializing in each of the various handicaps, to emphasize the special needs and characteristics of these children for whom more adequate care and training were being sought. They came to be referred to as "exceptional" children. In order to meet their needs educators developed what they called "special" education; and the need for "individualized" instruction was stressed.

By 1940, the educators had found out that handicapped children are not only different but also in some very important respects similar to other children. They are only partially "exceptional." By this time the "exceptional" children were showing signs of wanting to come back to school. It is a good thing for the handicapped child to be in school. His being in school teaches the teachers and pupils to be good to him. The teachers learn what is good for the handicapped child is good for all of their pupils as well. The pupils will learn how to treat the handicapped child and to consider him an equal.[1] Travis states:

> A speech disorder is a disorder of the person as well as a disorder in the movement of the speech organs. It is not enough to know what kind of a person has a speech defect....We are not interested in speech defects, but in speech defectives.[2]

Children with speech difficulties are sometimes emotionally maladjusted. One of the common contributors to the development of a maladjusted child is his inability to express himself correctly and intelligently through the medium of speech. A child who realizes that he "talks funny" is likely to become unhappy, shy and maladjusted in his school and social relationships.

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[1] Wendell Johnson, et. al., op. cit., p. 18.

[2] Lee Edward Travis, "A Point of View in Speech Correction," Quarterly Journal of Speech, Vol. 22, (1936), p. 57.

Mulgrave[1] classifies defective speech into three divisions: (1) functional speech disorders, (2) organic speech disorders, and (3) emotional speech disorders. In some cases both organic and functional speech disorders are emotional defects. A discussion of the disorders follows:

Functional Speech Disorders

"Baby talk" or speech containing many sound substitutions and as being generally infantile in pattern is classified under the functional speech defects. Most children pick up some inaccurate sound combinations when they first learn to talk. This is usually due to a child's inability to discriminate accurately in imitating the words he hears from adults. As the child matures, he becomes better able to hear the sound elements which combine to form words. Therefore, good adult patterns are a prerequisite to the child's learning to speak correctly. If he hears baby talk, too rapid or slovenly speech, that is the speech he will imitate. If teachers in the early grades are able to recognize sound substitutions, and if they are willing to give children who make sound substitutions opportunity to imitate correctly made sounds, they can do much to eliminate the bad habit of baby talk.

Lisping is usually defined as the habitual mispronunciation or the impure production of the sibilant sounds.

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[1] Dorothy Mulgrave, op. cit., p. 359.

These sounds are: s(S), z(z), sh(ʃ), and g(dʒ). There are three major divisions of lisping: the lingual protrusion lisp, the lateral emission lisp, and the nasal emission lisp. These forms may be functional, organic, or emotional. If there is no organic difficulty in the formation of the teeth, but there is a marked sibilance on the production of (s), or any cognate sound, the lisp is said to be inorganic. The organic lisp is frequently caused by imitation. In the lingual protrusion, the lisping is caused by the protrusion of the tongue on the production of the sibilant sounds. This usually starts when the child loses his first teeth. He gets into the habit of putting his tongue in the space caused by the loss of the teeth and by the time the second teeth appear, he has established a habit which is very difficult to break. This lisping consists of the substitution of th(θ) for (S) and th(ð) for (z). In the lateral emission, the tip of the tongue is curled back so the air is forced out between the sides of the teeth. This case may be recognized by the substitution of th(θ) for (S). In the production of the nasal emission lisp, the tongue is curled back so far that the sound is emitted through the nose. This production is usually caused by poor control of the soft palate.

Vulgar speech has some or all of the following characteristics: mispronunciation, poor voice quality, faulty intonation, improper stress, nasality, marked inversion, un-

voicing of voiced sounds, and sound substitutions. There is sometime the omission of sounds such as:'fith' for 'fifth' and 'with' for 'width'. Sometimes sounds are added incorrectly, such as, 'atheletic' instead of 'athletic'. Teachers, in order to give examples of good speech, must naturally free their own speech from vulgarisms.[1]

Delayed speech may be descriptive of such abnormalities as no speech at all, nonsense jargon, or speech which is so inadequate in sound formation that it is unintelligible.[2]

Normal children may evidence delayed speech and the teacher should be familiar with some of the aspects of this speech difficulty. The common causes of the lack of normal speech development are: low mentality, deafness, poor coordination due to disease or paralysis, prolonged illness (especially in the first two years of life), lack of necessity or motivation for speech, improper teaching methods used by parents, shift of handedness or confused hand preference, necessity for learning two or more languages at the same time, shock during the act of speaking, emotional conflicts, and aphasia.[3] Many of the above causes suggest that the child so inflicted requires treatment by a specialist. The teacher should be interested in cases

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[1] Ibid., p. 360

[2] Lorna Shogren Werner, Speech in the Elementary School, p. 36.

[3] C. Van Riper, Speech Corrections, p. 183.

that cannot be attributed to physical or mental handicaps. A child who has undergone periods of illness during the first two years of life, has not had a chance of going through the speech developmental stages which are usual for his age. At whatever age the child does achieve sufficient physical stamina, he should be encouraged to enjoy the early vocal play of infants.

One of the more common causes of delayed speech is that the child has no apparent need for speech. Over-indulgent parents are often so skillful in interpreting a child's jargon and in anticipating his desires that he has no need for speech. As soon as the child realizes that his desires will not be granted until he makes an attempt to name the object that he wants, he will make an effort.

Improper teaching methods of parents is another cause of delayed speech. Poor teaching methods would include such unfortunate practices as: over-stimulation before a child is ready in speech maturity to imitate; too much reaction by parents or friends to his early efforts; not enough stimulation at the time when imitative speech should be encouraged; poor examples of speech to imitate; and poor timing of parental stimulation.[1]

Voice problems are considered speech defects also. In a child the common voice problems are nasality, high

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[1] Lorna Shogren Werner, op. cit., p. 38.

pitch, monotone, lack of volume, breathy quality, and hoarse quality. Some voice problems are the results of poor habits. Bad voice habits are usually due to imitation of speech models. The child whose parents speak with extremely nasal voice quality is apt to develop the same fault through imitation. The girl whose mother's voice is high-pitched and shrill may follow suit and so on. The children may imitate the teacher's voice also.

The pitch level must be adequate, considered in terms of the age and sex of the individual. Men and women differ in vocal pitch, and children differ from adults. A disagreeable pitch level is nearly always badly suited to the person's vocal mechanism. If this pitch level is employed regularly it may be accompanied by unusual strain and fatigue.[1]

Nasality is produced when the vocal tone is strongly modified by resonance from the nasal cavities during the production of speech sounds which normally are essentially non-nasal, i.e., all sounds except (m), (n) and (ng). For these three, the sound must be directed through the nose. If for any reason, the soft palate and walls of the throat do not perform their usual function of shutting off the upper part of the throat and nasal cavities during the production of non-nasal sounds, the voice is excessively nasal in quality. It sounds as though the individual were

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[1] Wendell et. al., op. cit., p. 153.

talking through his nose, and that is what he is doing.[1]

Breathiness and lack of volume are often speech characteristics of timid, insecure children. There is much that the classroom teacher and parents can do to build up the child's confidence. They can encourage him to speak to other children in a voice that can be heard.

Hoarse voice quality can be heard as a temporary condition in persons who have a bad cold which affects the larynx. Sometimes hoarseness results from too much shouting at a football game or other games. This causes a temporary condition of inflammation affecting the larynx and vocal cords. It has also been found that a hoarse voice can result from habitual use of a pitch unsuited to the vocal mechanism, particularly, a pitch level which is too low for the individual.[2]

Children whose voices remain monotonously in the same pitch range need to be encouraged to use more variety of expression. A person can get more variety of expression partly through ear training, listening for the variety in the voice of others and comparing it with his own monotone and partly by being stimulated to read or talk with more enthusiasm.

Foreign accent is a term used to designate omission

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[1] Ibid., p. 153.

[2] Ibid., p. 154.

of sounds, sound substitutions and faulty intonation patterns due to the influence of a foreign language on English. The first task of the teacher, then, after she is sure of the accuracy of her own sounds is to make pupils feel that their native languages are not inferior to English, but that the method of producing sounds varies with each language in very much the same manner as the tune or melody of each language differs.

Organic Disorders:

Organic malformations including faulty dentition, cleft palate, cleft lip, adenoids, malformations of the larynx, and other parts of the speech mechanism may interfere with the development of correct speech. Accidents and injuries to the speech mechanism or injuries to the brain may result in defective speech.[1]

No organic disorder should be corrected by the classroom teacher without the aid of a speech pathologist.

Organic lisping is due to malformation of the jaw and for this reason it is called malocclusion. Malocclusion may be divided into three classifications: (1) the overshot jaw, when the upper jaw protrudes past the lower one; (2) the open-mouth bite, when the teeth are closed, meet on the sides but not in front; (3) and undershot, when the lower jaw protrudes past the upper one.

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[1] Nebraska State Department of Public Education, op. cit., p. 42.

The causes of malocclusion are thought to be the result of dietetical imperfections or malnutrition.[1] Thumb sucking is said to be the chief cause of the open-bite. The thumb placed in the mouth creates not only an opening between the incisors, but also distorts the anterior hard palate by the pressure of the thumb against it.[2]

Tongue-tiedness is caused by a cord called the fraenum, which may be too short and the tongue is not left with sufficient freedom to make some of the sounds of English satisfactorily. A simple operation in which the fraenum is clipped will make it possible for persons whose speech is impeded by the tension of this cord to have normal freedom of the tip of the tongue. A child with this defect has trouble making the sibilant sounds and the gum-ridge sounds. The child should not be made to exercise his tongue vigorously before an operation has been performed; because undue strain may tear the fraenum. A few weeks after the operation, exercises may be begun in order to make the tongue flexible, and at the same time to give the patient greater control in the use of his tongue.

Cleft palate is a cleft or an opening in the hard palate. In some instances, the soft palate is improperly formed. Children with this defect should be operated on

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[1] Dorothy Mulgrave, op. cit., p. 371.

[2] Robert West et. al., The Rehabilitation of Speech, p. 72.

during the first three years, and there will be no noticeable defect in speech. The cleft palate causes a greater alteration of speech sound than does any other malformation. The explosive sounds such as (k), (g), (t), (p) and (b) are the most seriously defective. The nasal equivalents are usually substituted for the voiced explosive sounds (g), (d), (b), and various substitutive sounds are made in other parts of the mouth, nose, or throat for the unvoiced explosives (k), (t), and (p). The fricatives: (p), (v), th(θ), th(ð); the sibilants: (s), (z), sh(ʃ), g(dʒ), are also seriously defective. The continuants: (r), and (l) and all of the vowels are nasalized.

Cleft lip disturbs only the sounds involving the upper lip such as: (p), (b), (m), (u), and (w). [1]

Hoarse voice is organic when it is caused by the impairment of the larynx proper, such as paralysis of one or both vocal cords, hemmorrhage of the vocal cords, infection and new growths of the larynx; it may be due to diseased tonsils or adenoids. It may be caused by nose breathing or mouth breathing because of nasal obstruction. The teacher can do little to lighten these physiological difficulties, but she may be able to help encourage the children to go to medical authorities to learn the cause of their condi-

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[1] Dorothy Mulgrave, op. cit., p. 371.

tion. It is sometimes dangerous for persons with hoarse voices to use their voices.

When nasality is due to physical cause, usually it is caused by abnormality in the nose; therefore, it is well to have the child examined by a nose specialist.

An obstruction of the nasal chamber may be caused by a large, bulky adenoid. It closes the nasopharynx and then the Eustachian tube, thus involving the middle ear and causing the impairment of hearing.[1]

Normally, humans learn to speak by hearing. Individuals who are dumb have nothing whatever the matter with their vocal mechanism in the great majority of cases, but were born deaf or became deaf while very young. As a result of not having heard sufficiently, they do not have any concept of sound and have not learned to speak. They can be taught to speak through a long course of highly specialized instruction employing senses other than hearing. Sight, touch and the other senses do help in a person's learning of speech, but their contribution is very small in comparison with that of hearing. Even with the most careful education based on the other senses, the deaf never achieve normal tone and expression. Many persons that have been thought to be feeble-minded were only deaf. Their seeming stupidity was a lack of comprehension based upon auditory deficiency. As soon as their hearing was corrected or compensated for,

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[1] Ibid., p. 73.

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their intelligence manifested itself.[1]

Spastic paralysis or cerebral palsy is due to an injury to the brain. One of the chief causes of cerebral palsy is some sort of injury to the brain at birth. If the mother's labor is difficult and prolonged, there may be a great deal of pressure on the baby's head. This in turn, may cause some of the blood vessels in the brain to burst, and the hemmorrhage which results may do much damage. An improperly developed brain before birth may also result in cerebral palsy. It may also be caused by a severe illness, which affects a part of the brain. The treatment of cerebral palsy is primarily a medical problem. The best studies on cerebral palsied children showed that almost one-third of them are so retarded mentally that they cannot profit from education. But the other two-thirds are able to learn and are deserving of special training to help them compensate for their handicaps. Some have brilliant minds.[2]

Emotional Disorders

Grave maladjustment is more likely to be found in the overly shy, withdrawing, unhappy child who seldom laughs heartily, who cries occasionally, gets discouraged easily,

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[1] James F. Bender and Victor A. Fields, Principles and Practices of Speech Correction, p. 232.

[2] Wendell Johnson et. al., op. cit., Pp. 295-96.

daydreams a good deal, and is not very popular with the other children. The good-humored child, always ready for a good time, who laughs easily and sometimes talks rather loudly may disturb the peace of the classroom now and then, but he is not likely to become maladjusted.

The causes of emotional disorders are due to undesirable and modifiable factors in the environment. The treatment is directed to modification of these environmental factors. In many cases the presence of speech defects may result in the development of psychological problems. Speech defects are so often the subject of amusement or ridicule that it is difficult for an individual so handicapped to avoid feeling embarrassed and inferior. The resulting tendency is to withdraw from social adjustment. These effects may prove to be more of a handicap than the speech defect.[1]

Stuttering is most commonly defined as a disorder in rhythm or fluency of speech, manifested in repeated sounds, words, or phrases or in prolonged sounds, pauses, blockages, or other hesitancies. But Johnson[2] explains that this definition is confusing and he gives this one:

> Stuttering is what a speaker does when (1) he expects stuttering to occur, (2) dreads it, and (3) becomes tense in anticipation of it and in (4) trying to avoid it. What he does in trying to avoid it amounts chiefly to a complete or partial stopping of speech.

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[1] Claude M. Wise et. al., Foundations of Speech, Pp. 456-57.

[2] Wendell Johnson et. al., op. cit., p. 182.

Gilford[1] gives two varieties of stuttering, audible and silent. Audible stuttering is easily recognized, but there is little or no outward sign in silent stammering or stuttering, although there is a complete muscular inhibition. Children so handicapped are greatly misunderstood and often thought to be either stubborn or stupid because they are unable to make a sound. The following conditions that may lead to stuttering are: personality conflicts in the home, parents trying to force their unfulfilled desires upon the child, excessive pampering by the parents, a domineering attitude on the part of the parents, over-anxious parents, lack of order in the home, unwise methods of discipline, evasive answers to a child's questions on the subject of sex, partiality to children shown by parents and the child's position in the family.

Dobbs[2] gives three stages through which a stutterer passes: The first is called the habit stage which is more of an imitative process. If it is handled properly it usually can be eliminated. The second is the fear stage when people laugh, scold, threaten and punish the stutterer. This stage may produce paralysis and it is more difficult to cure. The third is the stage of indifference. In this stage the person has become accustomed to the laughs. This

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[1] Mary Gilford, The Education of Pupils with Speech Defects in California, Bulletin of the California State Department of Education, Vol. V, No. 12, (December, 1941), p. 23.

[2] Mattiemae Dobbs, "Understanding Teacher Can Help Stuttering Pupils," Texas Outlook, (June, 1948), p.35.

is the most difficult. In order to help a child who stutters, the teacher should know in what stage the child has developed. He also states that any unhappy experience, producing tension may produce stuttering, so teachers should be careful to build in the child pleasurable mind-set for every experience. If a child is pushed or forced to read before he is ready this may cause over-tension that leads to stuttering. Stuttering may be produced by a mental state rather than a nerve condition such as: ghost pranks and other practical jokes, scenic railway rides, fire scenes and severe falls.

Bender and Field[1] give some important facts about stuttering. There are more male than female stutterers and more children stutterers than adults. There is a marked tendency for the onset of stuttering to fall into three periods of life: at the onset of speech, between five and seven years, and at adolescence. Certain stutterers stutter in all social communication, while others in specific situations, such as telephoning, riding in an elevator, in ordering a meal, and the like. Some stutterers do not stutter when they read aloud, while others do.

Johnson[2] thinks one thousand cases of stuttering could be prevented every year if certain repetitions in the speech of young children were calmly ignored or taken as part of

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[1] James F. Bender and Victor Fields, op. cit., p. 243.

[2] Wendell Johnson et. al., op. cit., Chapter V.

normal speech development, Stuttering in many cases begins when the child is made self-conscious about normal repetitions and hesitations of his speech. Whenever he tries to speak, someone asks him to stop, and start over, or to go slowly, to think and take a breath. He becomes self-conscious about his speech and in time loses confidence in his ability to speak acceptably.

Many studies have been made and none has revealed any physical or organic cause of stuttering. For this reason one cannot say that stuttering is inherited. A child inherits a body, and specific bodily parts. If no bodily part is shown to be different in stutterers from what it is in non-stutterers, there is no reason to believe that stuttering is inherited. Although stuttering is not heriditary, it does tend to run in families. This seems to be more of a tradition than anything else. Parents who stutter or have stuttered, or have grown up around someone who has stuttered, will react in such a way to the speech of their children that this may develop self-consciousness about speech, the anxiety-tension, that makes for stuttering.

Nervous hesitation is manifested by agitated, faltering, confusing speech. Excessive self-consciousness and and lack of poise are present, often resulting in the pupil's refusal to recite. Nervous hesitation is similar to the same feeling of inadequacy, inferiority, and timidity that characterizes stammering, or stuttering.[1]

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[1] Mary Gilford, op. cit., p. 79.

Cluttering is manifested by indistinct enunciation and excessive rapidity of speech, involving the dropping of consonant sounds, syllables, or the mumbling of sounds, syllables, and words. The breathing is often spasmodic and irregular. It is possible for the pupil to articulate properly every vowel and consonant when he is not under stress.[1]

Neurotic lisping is a form of nervous speech disorders manifested by the substitution of a complete or partial interruption of blockade of the outgoing breath stream which is required for the production of such consonants as (f), (v), (s), (z), voiced and voiceless(th). This speech disorder is the result of excessive muscular tension and is allied to stammering in origin; although the muscular tension excited is of a constant rather than of a spasmodic kind.

Before a classroom teacher will be able to help the pupils in her room with speech disorders, she must make a study of all the defects that might be present. She must seek the help of medical advice, also.

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[1] Ibid., p. 79.

CHAPTER III

AN ANALYSIS AND THE FINDINGS OF THE SPEECH DEFECTS COMMON TO THE CHILDREN IN THE COLORED ELEMENTARY SCHOOL OF LA MARQUE, TEXAS

After school had been in progress two weeks, the organization of a speech class was discussed with the teachers. The purpose of the class was given and the teachers were asked to give an expression of their ideas concerning the project. All of the teachers stated that they were willing to cooperate wholeheartedly.

The different kinds of speech defects were defined and outlined on a sheet of paper and given to the teachers. They were asked to observe their pupils two weeks and choose those whom they felt had deficiencies in their speech.

The teachers did this and in two weeks they reported their findings. Arrangements were made with the principal for a time to meet these pupils and set up a class for remedial practice. A class was scheduled to meet twice a week, on Tuesday and Friday afternoons,at 2:30 P. M.

At the first meeting the examiner became acquainted with the children. She then read them a story, "Tin Horns or Silver Horns?". This is a story of a beautiful voice and one that is harsh. The tin horn stands for the harsh voice and the silver horn stands for the beautiful voice.

The children were asked what kind of voice would they like to have. Of course, all of them wanted a silver one. In the story they were told how to make their voices like silver trumpets and all said they were willing to work hard to do just that. The pupils were asked if they would like to tell some stories. Some of them were very anxious to do so. These did; then the class asked the examiner to read another story. She then read them a story about "Patty and the Rag Doll." This is a story about a little girl who learned to relax. All of the children tried to relax as Patty had done in the story.

At the next meeting the examiner gave an articulation test. A picture test was given to the children who were unable to read. The picture test consisted of gaily colored pictures pasted on cards. The pupils were asked to give the names of the articles they saw on the cards. The names of these articles contained vowels and consonants that were usually difficult to say. Notations were made on each child's card. Samples of these tests will be found in the appendix.

Method of Analysis

A series of tests[1] were given to thirty-six children during the beginning of the school year. The tests follow:

1. Examination of the Teeth. This test was made to deter-

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[1] James F. Bender and Victor A. Fields, op. cit., Pp. 41-57.

mine how many teeth were missing. Sometime the absence of the front teeth may prevent the pupils from making the sibilant sounds.

2. Bite Test. This was given to determine the kind of bite the pupils had. The children were told to imagine they were biting down on a banana with their teeth showing. If the upper incisors hang over the lower front teeth, the bite is called "overbite." If the lower front teeth cover the upper incisors this is the underbite. If the teeth cannot meet and leave spaces between the teeth, this is the uneven bite. The normal bite takes place when the molar teeth mash and the upper incisors partially cover the lower front teeth.

3. Fraenum Test(Test for Tongue-tie). The pupils were asked to try moving the tip and front of the tongue freely. They were then asked to see if they could bring the tip of their tongues to the roof and ridges of their mouths. If they could do this they were not supposed to be tongue-tied.

4. Hearing Test(This was used because no objective hearing test was available). A pupil was seated with his back to the examiner in a quiet room. The examiner said,"Follow my directions when I whisper them to you while I close one of your ears." The examiner closed the left ear and at arm's length whispered extremely lightly:

"Point to the door."
"What is your first name?"

"Raise your right hand."

If the child did not respond to the directions, the examiner repeated the directions in a louder whisper. If the child did not hear these second directions they were again repeated in a louder voice. The examiner then closed the child's right ear and followed the above directions.

5. Tests for Labial Mobility(functional or organic paralysis of lip muscles). The children were told to open their jaws wide, and draw the upper lip tightly over the upper teeth and the lower lip tightly over the lower teeth. With the lips thus, they were told to slowly open and close the jaws. They were also told to pucker their lips as much as possible, and slowly move them to the extreme left, then to the extreme right. They were told to smile as broadly as possible while they kept the lips closed. The corners of the mouth were to be kept equi-distant from the space between the incisor teeth.

6. Tests of Nasal Conditions. To determine whether there is a free passage of breath through each nostril, the following test can be given: The children were told to hold a piece of typewriter paper so that the upper right edge was removed about three inches from the left nostril; then the right nostril was held closed with a finger of the right hand, breath was gently forced through the left nostril for two seconds. If the breath stream was steady and unimpeded, the upper right corner was noticeable blown.

The same directions were given for the right nostril. To determine whether nasal resonance is used in the production of non-nasal sounds, this test was given. A small pocket mirror was cooled by running cold water over it. Then it was wiped dry. The mirror was held an eighth to a quarter of an inch directly below the nostrils of the children as they were asked to say, "What will you say if Jack goes to the circus?" There were no nasal sounds, hence no film was to appear on the mirror. To determine whether nasal resonance was withheld from nasal sounds, the same test was given with the exception of the sentence. A sentence like this was given: "Now we will run for a long time." Since there were several nasal sounds in the sentence there would be nasal emission of breath on each nasal sound.

7. Tests for Palatal Sufficiency. The children were asked to blow a balloon or horn. If they could, their palates were considered all right. They were requested to repeat, "My papa bought a big stop watch." The sounds of (p) and (b) were to be articulated normally, since these sounds are made with the palate.

8. Breath Control Tests. The examiner lighted a candle, fixed it firmly on a holder and placed it six inches in front of the children with the base of the flame level with the examiner's lips. The children were told to blow the flame so that it bended away from them for three slow

counts. The flame should not flicker violently, nor be blown out. The children were given trials before the test was given.

9. Tests for Muscular Coordination. Two glasses were filled within one eighth of an inch of the rims. Each glass was set in a saucer and placed on a table within easy reach of the children. The children were asked to carry one glass and saucer in the right hand to the corner of the room and to place them on the floor without spilling any water. Then they were asked to carry the other glass and saucer with the left hand to the same place. Next, the children were asked to carry both glasses on the saucers at one time(one in each hand) back to the table. The less water spilled, the better the control of the muscular system involved. Then the children were asked to walk a straight line for about twenty feet, one foot in front of the other. Not more than three deviations were considered normal. The children were also asked to skip on the balls of the feet.

10. Test of Handedness. The children were seated at a desk and were given a ball of wrapping twine and an empty spool. They were told to wind the twine on the spool. The hand that was used to wind the twine was the preferred hand.

11. Test for Height and Weight Measurements. To determine the children's physical development and growth, a record was made of their heights and weights.

A state of nourishment of the speech handicapped child is very important to know, because an undernourished child is likely to be retarded in a speech correction program and will frequently present additional problems of attentiveness and learning.

After the first eleven tests were administered the results were written on each child's record card. A summary of the results is found in Table I.

TABLE I

RESULTS OF DIAGNOSTIC TESTS

Tests	Number of cases Taking tests	Number of Cases Defective	Number of Cases Normal
Teeth	36	1	35
Bite	36	5	31
Fraenum	36	0	36
Hearing	36	1	35
Labial Mobility	36	0	36
Nasal	36	0	36
Palatal Sufficiency	36	0	36
Breath	36	0	36
Muscular Coordination	36	0	36
Handedness (right)	36	0	36
Height & Weight	36	0	36

It may be noticed in Table I on page 38 that 35 out of 36 children had all of their teeth. There were five who had either overbite, underbite, or openbite; but there was just one who had an overbite that hindered him from improving in his speech. No one was diagnosed as being tongue-tied. One child had defective hearing. He had trouble with the sibilant (s). All children passed the labial mobility, nasal, palatal, breath, muscular coordination, and handedness tests. Four were found to be underweight. But in view of the deficiencies found in the speech mechanisms of the children, they all seemed to warrant training in a speech correction program that could be carried on in the classroom.

12. Personality Test. A part of Matthew's[1] test was given in an attempt to discover whether children indicated inferiority feeling, neurotic tendency, introversion-extroversion, confidence in oneself, sociability, and the like.

The Personality Test's results indicated that none of the pupils seemed unduly maladjusted. The unfavorable answers in the test are underlined in the sample of the Personality Test found in the appendix. Questions, seven and nine, were answered unfavorably by 92 per cent of the pupils. With the exception of four children, all answered the other questions favorably.

No conclusions from this test could be drawn as the

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[1] James F. Bender and Victor A. Fields, op. cit., p. 59.

cause for the speech defects that the children had. It might be surmised that a personality test is not reliable because the pupils know the favorable answers and they will not give unfavorable ones for fear of being criticised.

13. Test of Intelligence. The Haggerty Delta Intelligence Test I was given to Grades I through III and the Delta II was given to Grades IV through VI. The results of the test are found in Table II.

TABLE II

RESULTS OF THE HAGGERTY DELTA INTELLIGENCE TESTS

Score Intervals	Distribution of Grades						Totals
	1	2	3	4	5	6	
105-109					1		1
100-104	1						1
95-99		1			1		2
90-94	1		1			1	3
85-89	2	1	1			1	5
80-84	2			1		1	4
75-79				1	2		3
65-69		2				3	5
60-64		1			2		3
55-59		1	3				4
Totals	8	7	6	2	6	7	36
Median	82	69	60	80	77	72	73

The children were given this intelligence test to determine their ability to profit from a speech correction program. The children's intelligence was not rated wholly on the results from the test because of the irrelevant factors that sometime enter in. The results were compared with the children's scholastic records and their achievements.

As a result of the examination given to test the pupils' speech mechanisms, all of the pupils' defects were thought to be functional except those who stuttered and the one who had the severe overbite.

TABLE III

DISTRIBUTION OF THE SPEECH DEFECTS ACCORDING TO GRADE AND SEX

Grade	Articulation		Voice		Stuttering		Totals	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
6	1	2		1	3		4	3
5	2	3	1				3	3
4	1	1					1	1
3		6						6
2	5			2			5	2
1	3	4			1		4	4
Totals	12	16	1	3	4		17	19

Some of the findings were surprising. Most of the speech defects were functional. There were more girls who had defects in articulation and voice. On the other hand, four boys were found to stutter while stuttering was absent among the girls. There were fewer children who had speech defects in the fourth grade than in any of the other grades.

Case Histories Taken

The administration of these tests revealed a list of speech sounds defectively produced and gave a description of the children's speech equipment. It also shed significant light on the aspects of personality. However, it was necessary to avoid hasty conclusions from these diagnostic tests.

Before entering upon a speech correction program, it was necessary to make a careful study of the past and present state of the children's health, their education and their attitude toward school, and the history of the suspected speech defects.

In taking a case history of the pupils, one did learn the origin of the defects, whether they were imitative or whether they were caused by accident and also, whether there were some things in the children's home life that were causing the defects, or had caused them. Something was learned about the children's families and what effect they did have or had had on the defects.

In the appendix may be found two forms that were used

in making a case study.

A case history of all pupils was prepared and studied. An example of one such study follows:

"X" is a very large girl for the age of twelve. There are four children in the family. "X" is next to the youngest child, "Y", who is seven. She has two older brothers, "W" who is eighteen and "U" who is sixteen. "U" goes to school but "W" helps the mother support the family. The family is very poor. The mother is a domestic worker. The mother seems very pleasant and very interested in the welfare of herchildren. All of the children talk very distinctly except "X". The mother was very anxious for "X" to improve in her speech. When her mother was approached about the way "X" talked, she said the family of the girl's father talked that way, especially the women. She said she knew "X" could do better if she tried. She also stated that when "X" became excited, it was almost impossible to understand anything she said. "X"'s health is good; and she eats heartily. Her attendance in school is good. She is a fairly good student but does not participate often in discussions because she is afraid the children will laugh at her. Arithmetic is her favorite subject in which she excels. Her classmates are usually nice to her because they are used to the way she talks; but the children in the upper grades tease and make her very unhappy.

She had trouble making the sibilant (s) in combination with (p), (ch), (tr), (cr) and others. She also had a habit of pronouncing just the first syllable of words, and not the ending. This was a habit because she could do better if she tried and was reminded to do so. "X" was very anxious to improve in her speech. She came to practice everyday during recess. She did improve considerably. When the class ended she had learned to say (p) and (tr) sounds. She said she was going to keep on practicing until she could speak distinctly.

CHAPTER IV

PROGRAM FOR THE CORRECTION OF SPEECH DISORDERS

After the experimenter and the pupils who were to form the speech class had become acquainted, it was time to start to work trying to aid the speech handicapped pupils in the substitution of correct habits of speaking, for old and faulty ones.

Preparation

Due to the crowded condition of the school the experiment had to be conducted in the sixth grade classroom. A large mirror, several small pocket mirrors, tongue depressors, paper towels, alcohol for disinfectant, candles, and some toys were obtained.

Tuesdays and Thursdays, from 2:30 to 3:30 p. m., were designated by the principal to carry on the experiment.

It was very difficult to arrange lessons to fit all of their needs since this was a heterogeneous group. Nevertheless, some plan had to be worked out. The pupils who came from the first three grades went home ordinarily at 2:30 so they were kept about thirty minutes. A program was worked out which was thought to include all children who showed definite speech defects.

The schedule used follows:

1. Five minutes were used for exercises. There were exercises for relaxation, for breath control and

for the organs used in making the sound for that particular day.

2. Ten minutes were used to review the previous sound taught and for the introduction of the new sound. The sound was written on the board. The teacher made the sound and pupils repeated it using a pocket mirror if necessary.

3. Fifteen minutes were used to practice the sound. The pupils used the sound to begin words that they could recall. Jingles were read and sometimes games were played.
(first, second and third grades dismissed)

4. The children in the fourth, fifth, and sixth grades were given a list of words to pronounce using the sound in the beginning, in the middle, and at the ending of the word. Sentences were given using the sound all through them. In some instances choral reading, dramatization, and story-telling were utilized.

Examination

After each month of remedial work, a test was given on the articulation chart and on breath control to ascertain how much progress was being made. It was noticed that after four months of lessons, three pupils who had articulatory defects were not improving, so additional help was sought.

Assistance through the Speech Training Center for Cleft Palate Children was made possible by corresponding with Maxine Clearman, speech therapist, at the medical branch of the University of Texas in Galveston, Texas. She examined these children there. After the examination, it was thought that the defects of two pupils could be improved, but, in the case of the third, it was questionable because of the severe overbite.

Remedial Measures

In order to break down poor habits of speech and to build up desirable ones, breathing exercises, drills, games, readings, choral speaking, dramatization, and songs were planned.

The pupils learned to make various sounds that make up the ordinary words used in conversation by practicing these sounds distinctly and correctly.

Breathing Exercises. Correct breathing is the foundation of good speech, as well as of good health. Here are some exercises suitable for children that were used:[1]

1. Exercises for Breath Control:

   a. Smell an imaginary or real flower.
   b. Blow bubbles, puff balls, feathers or blow up a balloon.
   c. Pretend you are asleep--stretch the arms and yawn, "Ah."
   d. Children make paper pin wheels and then steadily as long as they can, blow.
   e. Read these sentences on one breath. Take a breath for each sentence.

      Hurrah for the snow!
      Hail to our beautiful flag!
      March called, "Ho, there, ho!

2. Exercises for Relaxation:

   a. Roll your head slowly around in a circle after yawning two or three times, saying very softly: "My head feels so heavy."
   b. Floating. Children are seated at the desk; direct them to stretch their arms forward, to place their heads on the desks to relax, when command is given, "Float."
   c. Playing Rag Doll. This requires the use of "play-magic," which the teacher makes by waving her arms.

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[1] M. Pearl Lloyd, Our Second Speech Book, p. 13.

With one wave the feet turn to rags, at the second the knees, then the back, arms, elbows, hands, neck, and head, in the order given. The teacher then goes on a tour of inspection, gently shaking arms, to be sure all are relaxed. Then with magic and a command the room must be waked up and the exercise repeated.

3. Exercises for the Tongue:

The tongue may be considered the most important muscle of the articulation mechanism. Its independent and efficient activity is essential to the correct production of all speech sounds.[1]

a. Lead the children to talk about the kittens they have seen. Introduce the subject of how kittens drink. "Did you ever see a kitchen drink milk? He puts out his tongue like this." (Thrust the tongue slowly forward then back quickly into the mouth). Ask a child to be a kitty and show how he drinks milk. Have the child thrust his tongue out slowly then back quickly.

b. Tell the children that they will play "Jack in the Box." The tongue is little Jack and the mouth is his box. Give the directions by substituting the word Jack for tongue. Example: "Jack puts his head out of the door very quickly. Jack puts it back slowly. Jack touches the top of his house."

4. Exercises for the Lips:

a. Clowns. Draw pictures on the board of the faces of clowns showing the lip positions for "ee," "ah," "oo." Have the children imitate the positions exaggerating the lip movements while forming the sounds. When "ee-oo," is said the sides of the mouth are drawn back, lips wide to lips rounded. When "ee-ah," is said sides of mouth are drawn, lips wide to lips wide apart. When "ah-oo" is said lips wide apart as lips rounded.

b. Put the lips as if for whistling, blow gently upon the palm of the hand.

5. Exercises for Jaw:

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[1] James F. Bender and Victor A. Fields, op. cit., p. 116.

Many children need to be able to drop the jaw with the freedom that is necessary to good speech. Special training is necessary to develop the ability to drop the mouth open.[1]

a. On the word "Drop!" the jaw should be dropped loosely. It will be found that to secure adequate opening by mere relaxation requires considerable practice.
b. Place the finger tips on the points of the jaw beneath the ears and on the word, "Drop!" feel the whole jaw lightly dropping down. Children are apt to think that the front of the mouth is the only part that matters in opening. Actually, the back is at least as important. The whole jaw should drop and the feeling be recognized.
c. Say "yah-yah" repeatedly, opening the mouth wide, then closing it completely.

6. Exercises for the Soft Palate:

These exercises are designed to increase the flexibility of the soft palate. Many children need exercises to strengthen and add agility to the soft palate, the weakness of which is a frequent cause of that stuffy type of speech which suggests a cold in the head.[2]

a. Go through the motion of gargling.
b. Repeat "ung-kah," prolonging and exploding the "k" vigorously. The soft palate will drop for "ung" and rise for "k."
c. All kinds of blowing exercises, such as blowing objects through straws, blowing bubbles in water, blowing up small bags, chewing and blowing bubble gum, blowing out candles and blowing pin wheels are all good exercises for strengthening the soft palate.

Drills. In order for the teacher to help the handicapped child toward normal speech, it is necessary to deal with sounds both in isolation and in words. For that rea-

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[1] M. Pearl Lloyd, op. cit., p. 18.

[2] Bulletin of California State Department of Education, "Speech Correction in the Elementary School.(March, 1948), p. 7.

son the teacher must know exactly what the tongue, the lips, the jaws, and the soft palate do when each sound is made, and she must further be able to help the child to make the sounds correctly. Since people do not make their sounds exactly, any deviations from the standard production are acceptable as long as the sounds are made clearly and easily.[1]

There are two main classes of speech sounds: consonants and vowels. A consonant is a sound made by obstructing the tone and not allowing it free passage through the mouth. "Y" and "w" have the nature of both a vowel and a consonant. There are two classes of consonants: (1) oral, those made in the mouth; and (2) nasal, those made in the nasal cavities. In making all oral sounds, the soft palate is lifted, thus blocking the passage into the nasal cavities.

Consonants [2] are further classified as voiceless and voiced. For the voiceless sounds the tongue, lips, jaw, and palate are placed in position, and the breath is articulated. Voiceless consonants are made correctly when one places his finger before his lips, the breath can be felt as it is expelled. For the voiced consonants the vocal cords vibrate, and the organs of articulation form the vocalized sound. The vibrations of the nasal consonants may be felt by placing the fingers on the sides of the nose.

1. Consonants made with Lips: "p-b," "m," "w-wh."

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[1] Texas State Department of Education, op. cit.,p. 88.

[2] Ibid., p. 88.

a. The sound of "p" is just a little puff of air which can be made by closing your lips firmly and then letting them open with a little explosion. "B" is made the same way except there is a sound in your throat when the lips open. Practice saying "Pay, pea, pie," and"Bay, bee, buy."

b. "M" is made by pressing the lips together and allowing the vocalization to escape through the nostrils. Hum a favorite song to give practice in making "m."

c. The sounds, "w" and "wh", need well-rounded lips. For "wh," one needs but blow quickly but for "w" the sound is made in the throat.

2. Consonants made with the Tongue and Soft Palate: "k-g," "c," "y," "ng."

a. The sound of "k" and "g" are formed by blocking the mouth with the back of the tongue against the soft palate and releasing the blockage with explosive puff. Practice saying: "Kay, key, kie, koh, koo" and for "g," say "Gay, gee, gie, goo." When the "k" comes before "r" or "l" it is usually spelled with "c" thus, crow, crack, clock, cluck.

b. The sound, "y," is made with the middle of the tongue and your soft palate jumps up. Keep the tip down behind the lower teeth. Practice saying "Yoo-hoo." Sometime the letter "y" makes the "i" sound.

c. To make the sound "ng" the back of your tongue and your soft palate come together and make the sound go through your nose. This is called the palate hum. Practice saying: "Sing, dong" and holding the "ng" each time.

3. Consonants made with the lips, teeth and tongues: "f-v", "th-th."

a. "F" and "v" are made with the teeth and lower lip. Bring the lower lip to the upper teeth and blow. This is the sound of "f." Keep your lip and teeth together and sing instead of blowing and this gives the "v" sound. Practice saying these words: five, front, leaf, vowel, have.

b. The voiceless sound of the "th" is the sound in "thin, tooth," and the voiced sound is that in "the and smooth." These sounds seem very difficult to make. Both sounds are formed by placing the sides and front of the tongue surface so as to form a wide passageway for the breath stream. The air flows between the upper front teeth and the tongue

tip, which may be slightly protruded so as to be barely visible between the upper and lower teeth. As an exercise, the child may be given a mirror and asked to place his tongue so that he can just see the tip between the teeth, then blow away a slip of paper held before his mouth. By so doing he will have formed the voiceless "th." When the sound has been mastered, practice saying it in nonsense syllables with "a," "e," and "i." After the voiceless "th" has been made, the child can be taught the voiced "th." It is the same as the other except the child sings instead of blowing. Practice with habit-forming exercises, such as: "Thay, thum."

4. Consonants made with the Tongue and Hard Palate: "t-d," "n."

   a. In making the "t" and "d" sounds place the tip of the tongue against the tooth ridge, which is the place behind the upper teeth where the roof of the mouth begins to curve up. Place the tip of your tongue against the ridge and put your thumb and first finger together and press hard. Let your thumb and finger jump apart as your tongue jumps away from the ridge. That little explosion is the "t" sound. Say it again but sing it as the tongue jumps away. This time "d" is made. Practice saying: "Tay, tee, tie," and "Day, dee, die."

   b. To make "n" put the tip of the tongue against the tooth ridge and hold it there, while you hum. Hum a song.

5. Sibilant Sounds: [1] "s-z." "sh-zh," "ch-j."

   a. The "s" is made by forcing breath through a central groove of the tongue which cleaves to the roof of the mouth. The breath escapes over the tip of the tongue and it is directed against the front teeth. It is a voiceless continuant. The tip of the tongue must not touch the front teeth or the "s" will lisp. If too much air is sent through the groove the "s" will hiss. Practice making the sound of the snake: "S-s-s-s." Then practice these words: say, see, sigh, and other words with the "s" sound. When the "s" has been mastered, the "z" should not give any trouble. It is the singing mate of "s" and is made with the tongue in the same position. Practice the busy bee sound: "Z-z-z-z." Practice saying: "Za, ze, zi, zing."

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[1] Bulletin of California, op. cit., p. 7.

b. "Sh" is called the "hushing sound." It is made by raising the tip of the tongue to the ridge but a wider groove is formed than for "s." This sound does not have a letter of its own, so it is usually spelled with "s" and "h." The sound is mostly accompanied by protruding lips to direct the breath emission. When the sound is produced properly the breath is great enough to be felt on the back of the hand if held close to, but not touching the lips. Say: "Sha, she, shi, sho." "Zh" is the cognate of "sh," and is produced the same way except for the addition of vocalization. Practice saying: "Zh, zh, zh." The "zh" is the sound that "s" makes in pleasure, measure, and treasure.

c. "Ch" is a close blend of "t" and "sh." The letters "tch" as in match represent the sound better than "sh." The tongue takes a position similar to that for "sh," but is pressed against the gum as for "t." The breath, instead of issuing in a gentle stream, as in "sh," is weakly exploded. Since "sh" and "ch" are sometimes confusing much practice should be given. This demonstration can be given to show the difference between the two sounds. A light slip of paper held before the child's lips will fly away with the puff of breath as she says "sh." The sound "ch" cannot be prolonged as "sh" can. Practice saying "show, chew; ship, chip." The sound of the consonant "j" is represented sometimes by the letters "g" or "dg." This sound may be developed by voicing "ch." It is a close blend of "d" and "sh." Practice these words: far, jaw, just, giant, gentle.

5. Consonants made with the Blade of the Tongue and Hard Palate: "l," and "r."

a. "L" is a sound with which many children have trouble. They sound "w" instead of "l" because they use lips instead of their tongues. To make "l" lift the tongue tip up to the ridge. Then hold it there while you sing, the sound and let it come out at the side, just behind the tip. The tip of the tongue must not touch the front teeth. Practice saying: "Luh, luh, luh," and "Lah, lah, lah."

b. "R" is a continuant, voiced sound made by raising the entire tongue so that the sides of the tongue touch the side teeth, and the tip almost, but not touch the gum. Practice these words: run, rang, rear, bird and others with the "r" sound.

6. Sound made just with the Breath: "h."

a. The sound "h" which is merely a breathing with the tongue and lips in shape for the following vowel. It is not articulated; it is simply breath allowed to escape vigorously from the mouth. It is voiceless and continuant. Practice saying: "Ho, ho; ho, ho."

A vowel is a voiced sound made with the tone passage open and free from obstruction. It is characterized by the size, shape, and surface tension of the mouth opening, which is modified by the distant between the teeth made by dropping the lower jaw, by the shape of the lips and by the tongue. A vowel is further classified as front, middle, and back, according to the part of the tongue which is used to modify the mouth opening. "E" is a high front sound because the front of the tongue is raised high against the hard palate to form the sound.[1]

1. Vowels that need round lips: "o͞o," "o͝o," "o͞," "o͡," "o͝."

a. "o͞o is taken first because it takes the roundest lips of all. The lips are gathered in tightly as if they were on a gathering string. After they are pulled together tightly, sing through the round hole. Practice saying these words: "Boot, hoof, cool, food, coop."

b. To make "o͝o" the gathering string in your lips is let out a little. This sound is not always spelled with two o's. It is sometimes spelled "ou" as in "could" and sometimes "u" as in "full." Say "oo, oo," five times. Then practice saying: "Good, book, could, bush, full."

c. The gathering string is let out a little more for "o͞" also. This sound starts with a good round mouth and the gathering string let loose. Then it puckers up into "oo." Say: "o͞o, o͝o, o͞." five times. These diphthongs: "ow," "eau," "oa," "ou," have the

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[1] Texas State Department of Education, op. cit., p. 88.

"ō" sound. Practice saying these words: "Go, hope, boat, know, grow, beau, soul."

d. To make this sound, "ô," the back of the tongue drops a little more and the corners of the mouth are pulled in. The mouth looks like "O." This sound is found in words that have the letter "o" followed by "r," and words spelled with "ou." Practice saying these words: "Cork, corn, north, for, roar, pour, ought, bought."

e. This sound, "o͝o," needs the lips to be round but not as much as any of the others. To make it, the back of the tongue drops down a little more and the lips are just a little bit round. Practice these words and others with the "o" sound: "Dog, hog, top."

2. Vowels made with the blade of the tongue: "ȧ," "a͝e," "e͝e," "ā," "i͝e," "ēē,"

a. This sound, "ȧ," is made by opening the mouth wide and keeping the jaw still. The blade of the tongue will lift a little. Practice these words: "Ask, mask, class, dance, bath."

b. To make the "a͝e" as in "at," the blade of the tongue lifts a little more. The mouth does not need to open as wide as it does for "a." Practice these words: "Candy, carry, catch, carrot, paddle."

c. If the tongue is lifted a little more than it was for "a͝e," the sound "e͝e" is made. Say "Mat, met." Then say "Bat, bet; pat, pet; sat, set; man, men." Practicing these words will help: "Shell, measure, pleasure, plenty, egg."

d. Another diphthong is "a." It begins with "ā" and turns into "i͝e." The tongue moves up a little. Say: "Pan, pen, pane; man, men, mane." This sound is not always spelled with an "a." It is sometimes "ei," "ay," "ey," "ea," and "ai." Say these words: "Eight, freight, mate, race, day, they, pail, rain."

e. The tongue is lifted a little bit more and the sound that is heard is "i͝e" as in "pin." Practice saying, "Finish, fish, knit."

f. To make this sound, "ēē," the blade of the tongue is lifted until it almost touches the ridge and the lips are pulled back. The sound is the same as is found in "see," Say: "fate, fit, feet."

3. Vowels made with the middle of the tongue: "û," and "ŭ."

a. When the letter "û" is used with and before the letter "r," it makes this sound. The tongue is arched toward the roof of the mouth, then the tip lightly moves back to the back of the lower teeth and the lips are unrounded and the jaw is lowered about midway. When the letter"o" stands between "w" and "r," it says "û" as in "work." The letter "e" says "u" in words like these: her, fern, certain, serpent. When the letter "i" stands before "r," it nearly always make the "u" sound as in: bird, girl, birth, first, dirty. Practice saying these words: "turn," furnace, nurse, church, mirth, first, word, worm." When "e" stands with "a" before "r," they sometime make "û" as in learn, earn, heard, and early.

b. "ŭ" sound is like a little grunt. Practice saying: "Must, bundle, sudden, dumb." Sometimes the letter "o" makes the "u" sound, thus: come, one, honey, worry. In some words "ou" says "u" in words like tough, touch, rough, enough, young.

Games. It was thought that lessons for the smaller children should be sugar-coated. It was also believed that participation in simple games, in which the sounds are stressed would train children to discriminate sounds they hear and to effect a more correct imitation. Here follow some of the games the children played and seemed to have enjoyed.[1]

1. Basket Upset. The children are seated in a circle or at their desks. Each child is given the name of a fruit. One child is chosen to be the caller without a seat. As he calls the name of a fruit all the children who were given that name exchange seats. Children could be given the name of a different fruit unless there were so many there would not be enough fruits to go around. When the caller says "Fruit basket upset," all children change seats. The caller tries to secure a seat as they exchange places. The child left without a seat becomes the next caller. The game may also be played by using the names of vegetables or flowers. Some names of fruits with different sounds are: "k," "g:" currants, gooseberries; "w:" watermelon; "f:" figs; "s,z:" citrons,

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[1] Ida Mae Case and Sarah T. Barrows, op. cit., p. 31.

2. Peddling. One child who needs special speech drill is chosen to be the peddler who may sell fruit or vegetables. The teacher pretends to put into his basket a certain fruit or vegetable, the name of which contains the sound which is the subject of the drill. The peddler goes to each child and calls the name of what he has to sell. The other children may pretend to buy from him.

3. Ball Game. Have two balls of different color or size. Give each ball a name of a vegetable or a fruit. For example, when a drill is given on the sound "sh," one of the balls may be named radish and the other squash. Each child is given a turn to ask for one of the balls. If the child says correctly, "Please pass the squash," the teacher throws the ball which was named squash to him. If the child says, "Please pass the radish," the other ball is thrown to him.

4. Follow the Leader. The teacher acts as leader, repeating a single sound until all the class are following. The leader says the sounds instead of the letters, for example, "P-p-p-p, b-b-b-b, m-m-m-m, f-f-f-f." He progresses from sound to sound. Pupils who make the sounds correctly are sheep. Those who do not follow the leader are goats. Different children may be chosen to act as leaders.

5. Copy Cat. One child is the leader and gives out the sound which is chosen. Each child repeats it after the leader who continues to give sounds. If a child makes a mistake the leader corrects it. If the leader fails to hear the mistake, anyone may raise his hand, correct the mistake and become the new leader; change leaders after seven or eight sounds, so as to keep up the interest. Keep scores.

Songs: Songs were used to practice certain sounds. The following songs were taught the children: "Do This, Do That," to practice the "th" sound; "Did you ever See a Lassie," for the "l" sound; "Farmer in the Dell," for the "f" and "d" sounds; and the "The Muffin Man," and "The Mulberry Bush" for the "m" sound. Other songs were made up to suit a particular sound.

Choral Reading. Majorie Gullan first formed a "Verse Speaking Choir" in Glasgow in 1922. Choral Speaking is reciting poetry or prose in different arrangement by a choir. It offered help for children who were too shy to talk individually but would join in with other children in the choral recitation.[1]

There are five main types of choral speaking, namily: (1) the refrain, (2) the two-part choral work, (3) the sequence, (4) the cumulative, and (5) the unison.

The refrain is the simplest type of choir response, because the group come in as a whole only in the repeated line or lines in each stanza. The refrain is an excellent way to begin the training of a choir.

The two-part choral work is next. The group is divided according to "light" or"dark" quality. A poem which is in the form of questions and answers or dialogue is a good sample of this kind such as: "Who Has Seen the Wind?"

The sequence is another type. It is concerned with the building up of the details of a theme to its conclusion or of presenting many details of a theme already stated. Each speaker or group of speakers is responsible for carrying through and linking up the separate parts of the theme, and must avoid above everything else the presentation of his own contribution as if it were an isolated unit. An example

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[1] Lorna Shogren Werner, op. cit., p. 75

of this type is: "Someone" by Walter de La Mare.

The cumulative is next to the most difficult type of choral grouping. It involves, more then the other forms, the use of voice quality to achieve an interpretative effect. Individual voices, or groups made up of similar voices, are combined one after another to achieve a cumulative effect. The purpose is not simply to provide greater volume, but to build to a more significant climax by adding gradually, voice by voice, to the importance of the final outcome. "The Owl and the Pussy-cat" by Edward Lear, illustrates this type.

The unison work is the most difficult type of choral speaking to do well. It should not be attempted until the choir has had sufficient experience to enable them to speak as "one voice." For elementary school children, it is best to limit unison speaking to short poems, which requires unison speaking to preserve the continuity. "Rain" by Robert Louis Stevenson, represents this type of choral speaking.

Reading Aloud: Reading aloud is an excellent means of helping the child maintain good speaking habits. Since reading is an activity that is a part of the daily curriculum in most of the grades of the elementary school, the teacher has at her disposal an excellent opportunity to encourage good speech as essential to good reading. No one wants to listen to a mumbler, to a voice that cannot be heard or to a monotone.

Reading aloud, to be a pleasure to the class, requires the application of all the principles of good speech which have been stressed in the primary grades. The first requirement of an oral reader, of course, is that he be clearly understood. The ears are not able to convey meaning as quickly as our eyes. Consequently, the reader must adjust his rate to the ability of his listeners to follow. This usually means cautioning a child to "slow down," because he tends to read aloud at his silent rate. Precise articulation and plainly audible voice should be the objectives, rather than speed.

In order that the materials be interesting the reader must make the printed words come to life. If there is dialogue in the story, the child is encouraged to made the characters " talk" rather than just to utter words from the printed page. If there is action in the story, the reader's voice and enthusiam should be such that the listeners feel the action.

The reader must be able to pick out the essential thoughts and ideas in the material he is reading. The punctuation marks help him to do this. To the oral reader, a period and a comma should indicate a pause for renewal of air supply.

The pupils of the fourth, fifth and sixth grades were given practice in reading aloud. They were told to put life into the story by feeling the words as they read them. Their voices and expressions were to suggest the humor or the

pathos, the suspense or the surprise which they found in the story. Most important of all, they were to make the listeners enjoy the story by having the characters seem real. They made their characters come to life by having them talk, rather than merely by reading words that were said by the characters.

The children's interest determined to the reader whether his reading of the story was good or bad. The children helped one another by making suggestions for improvement and by commenting on the reading that they particularly enjoyed.

Storytelling. The art of storytelling requires all the skills of an oral reader with the addition of a technique known as delivery.[1] It is more difficult to stand up before a class and tell a story than it is to read the same story.

One of the first requirements of a good storyteller is that he knows his story. He must have the main ideas or events catalogued in his mind in the order in which they took place.

The children should be taught that a good speaker stands firmly on both feet, body comfortable erect, with his hands at his sides, where they will be available if he wants to use them for explanation. Correct posture is hard for youngsters to learn. They should be taught that bodily ease in speaking is an important asset.

Timid children who are not at ease, or children who are

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[1] Ibid., p. 191

indifferent toward the audience, will tend to let their eyes wander out of the window or remain downcast. A good speaker is direct; he looks at his audience and holds its attention. The same directness is achieved if the speaker looks at the tops of the heads of the other children. Looking at tops of the heads will not prove as disconcerting to the speaker as looking into the eyes. However,it makes the audience feel that they are talked to directly.

In the speech class, the pupils chose for their story-telling only stories that had actien and conversation. In relating the words, portrayal of characters in stories suggested the type of person by means of change in voice and expression. An element of suspense was stimulated in order to carry the audience's enthusiasm to the climax. Some of the above suggestions were very difficult for the children to carry out but they did their best.

Dramatization: The children did not do much in dramatization, and that which was done was creative. Instead of memorizing set speeches and acting parts in the way the teacher directed, the children developed plays out of their own experiences and imaginations.

They first tried dramatizing "The Three Little Kittens Who Lost Their Mittens" because most of the conversation is contained in the poem and the action is clearly indicated. After doing this story, they tried "Little Red Riding Hood" and "The Three Bears and Goldilocks."

The children studied thoroughly the characters which

they were to portray to get an idea of their appearances, actions and their characteristic speech. In other words, each child tried to live the character whom he portrayed.

Dramatization gave the children excellent opportunity for the use of the sounds in a natural speech situation. It was thought that performance before the class would help to motivate them to continued effort to overcome the faulty speech habits.

Helping the Children with Emotional Defects: In addition to the exercises that the pupils with articulatory defects performed, the children with emotional defects needed other training. Those who had emotional defects were stutterers.

These children were taught that the more concentration they put on mental speech, the less they would stutter. They were given sentences to say over and over in their minds without whispering or using their voices but just lip movement.

They were given opportunities to read together. It was discovered that they did not stutter when they read in concert. It was also noticed that the more they were familiar with the reading material, the less they would stutter They memorized poems and did not stutter while delivering them.

All parents of these children were given a pamplet, Stuttering, to read which was prepared for the American

Speech and Hearing Association.[1] Among the many helpful suggestions given in this pamplet were some rules to observe and help their children to follow, namily:

1. Relax
2. Build and maintain healthy bodies
3. Always speak with the chest full
4. Speak freely and with ease
5. Build self-confidence in speaking

More drills, games, and exercises may be found in the books in the bibliography.

Results of the Remedial Speech Program: The remedial program lasted eight months. In the last month it was observed that some of the children had made satisfactory improvement while the others had not.

All of the children in the remedial class had been given poems, and parts in choral speaking to memorize. Some children learned how to recite two and three poems fluently and with expression.

The children who had been shy and timid at the beginning of the speech program now would come before the class to tell stories, recite poems and take part in dramatics.

By way of testing, a program was given and all pupils participated except four whose attendance in school had been so poor that they were forced to quit the class. A recorder was used to record their voices. This recording was compared with the recording that was made at the beginning of the

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[1] National Society for Cripple Children and Adults, Stuttering, (1948).

of the remedial class. The children's voices were louder, stronger and clearer on the second recording then on the first.

It may be seen in Table IV, that the improvement for seven was unsatisfactory, twenty-one was satisfactory and eight was very satisfactory.

TABLE IV

SUMMARY OF RESULTS ON REMEDIAL SPEECH PROGRAM

Speech Defects According to Sex		Unsatisfactory	Satisfactory	Very Satisfactory	Total
Articulation	Boys	3	7	2	12
	Girls	2	9	5	16
Voice	Boys		1		1
	Girls	1	2		3
Emotional	Boys	1	2	1	4
	Girls				
Totals		7	21	8	36

Four pupils were dropped from the class roll because they did not attend regularly, and naturally they did not make progress. One child had an organic defect. He learned to say a few words correctly but his progress was unsatisfactory. One had poor mental capacity and she did

not respond to any instruction. One of the children who stuttered did not seem to make any improvement; so a conference was held with his parents but no decision was reached.

It is thought that the speech program could have been more effective if there had been another time when the children could have come th the remedial class. The primary children had been in the habit of going home at 2:30 p.m. so it was a little hard on them to stay until 3:00 P.m. Some would be tired and hungry and under those conditions no one is able to do his best work.

Then too, since there is not a health room or any empty room in the school, the class had to be carried on in the sixth grade classroom and it was impossible to fix it as it should have been for a class of that kind. But in spite of all the difficulties under which the children had to work it is thought they did exceptionally well.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

This investigation has endeavored to show that it is imperative to have a speech correction program in the elementary grades if our boys and girls are to take part in a democracy that has been labeled "government by talk," because its problems are not settled by force but are talked out of existence or into solution.[1]

There were certain factors brought out in this study, that may be summarized as the following:

1. The speech mechanism is divided into four parts: the motor, the vibrator, the resonators, and the modifiers.
2. There are certain parts in the dominant cerebral hemisphere of the brain that must be active in order for us to talk and understand words.
3. There are three main classes of speech disorders: (1) functional, (2) organic, and (3) emotional.
4. Children with speech defects are at a disadvantage in the classroom.
5. Children with speech difficulties are often emotionally maladjusted.

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[1] William Norwood Brigance, "Speech in a Democratic Educational System," School Executive, (April, 1950), p. 47.

6. Other programs for the speech defective brought results.
7. There were only male stutterers in La Marque Colored School.
8. There were more girls in La Marque Colored School with articulatory defects than boys.
9. Children with speech defects need breathing and relaxation exercises, drills, and games to help them improve their speech.
10. Teachers do little to help the speech defectives.
11. Educators have found out that handicapped children are not only different, but are in some very important respects similar to other children.
12. In several of the more progressive states, programs have been established for speech correction in the public schools.
13. Some defects in speech can be prevented if parents are cognizant of the factors that cause certain speech defects.
14. Speech defects are caused by imperfection of the speech mechanism, emotional instability, laziness, and imitativeness.

Conclusions

From the results obtained in this study, the following conclusions have been reached:

1. Speech has been improved through the remedial program.

2. There were more functional than emotional and organic defects found among the pupils.
3. Children in the intermediate grades were more interested in improving their speech than those in the primary grades.
4. Children should be given corrective speech training before entering high school.
5. Parents should be encouraged to seek aid for their children who have speech disorders.
6. Teachers should have a sympathetic understanding of the pupils with defective speech in their classroom.

Recommendations

Based on the conclusions presented above, the following recommendations are offered:

1. That Negro institutions of higher learning offer courses in speech correction.
2. That every teacher learn to help the speech defective in her classroom.
3. That a remedial speech program be continued in La Marque Colored School.
4. That literature and medical aid be made available to parents of children with defective speech.
5. That special trained speech teachers be appointed to school systems having children with speech defects.

APPENDIX

Name_____Age____Date_____Grade_____

School_____ ___Address_____

TEST IN ARTICULATION

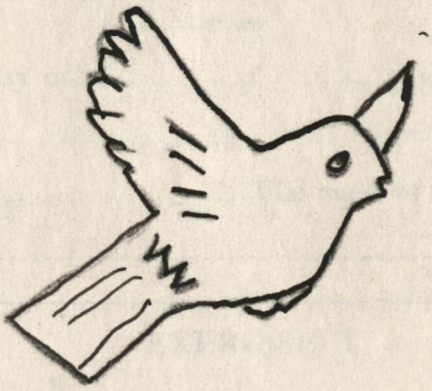
			Substitution	Distortion	Omission				Substitution	Distortion	Omission
1.	(e)	bee	..	..	..	23.	(k)	kite	..	..	..
2.	(i)	hit	..	..	..	24.	(g)	game	..	..	..
3.	(e)	bed	..	..	..	25.	(r)	rice	..	..	..
4.	(a)	cat	..	..	..	26.	(l)	lice	..	..	..
5.	(u)	hut	..	..	..	27.	(f)	fire	..	..	..
6.	(a)	father	..	..	..	28.	(v)	vine	..	..	..
7.	(o)	law	..	..	..	29.	(th)	thin	..	..	..
8.	(o)	oh	..	..	..	30.	(th)	that	..	..	..
9.	(oo)	foot	..	..	..	31.	(s)	say	..	..	..
10.	(u)	use	..	..	..	32.	(z)	lazy	..	..	..
11.	(Ou)	ouch	..	..	..	33.	(sh)	rush	..	..	..
12.	(a)	day	..	..	..	34.	(zh)	rouge	..	..	..
13.	(i)	light	..	..	..	35.	(h)	hit	..	..	..
14.	(oi)	oil	..	..	..	36.	(wh)	whale	..	..	..
15.	(m)	man	..	..	..	37.	(w)	wine	..	..	..
16.	(n)	new	..	..	..	38.	(y)	yes	..	..	..
17.	(ng)	sing	..	..	..	39.	(ch)	char	..	..	..
18.	(p)	pin	..	..	..	40.	(j)	jar	..	..	..
19.	(b)	bin	..	..	..	41.	(tr)	train	..	..	..
20.	(bl)	black	..	..	..	42.	(sn)	snake	..	..	..
21.	(cl)	clock	..	..	..	43.	(sp)	spool	..	..	..
22.	(t)	toy	..	..	..	44.	(sl)	sled	..	..	..

I. Indistinct Speech
- L Lisping
- Inorganic------
- Organic--------
- Dialect----------
- Foreign Accent-----
- Poor Enunciation---
- Tongue-tie---------
- Cleft Palate-------
- Cleft Lip----------

II. Unpleasant Voice
- Nasality---------
- Monotone---------
- High Pitch-------
- Hoarseness-------
- Weak-------------
- Breathy Quality--

III. Emotional Disorders
- Stuttering-------
- Cluttering-------
- Nervous Hesitation

Articulation Test For Non-Readers



Haggerty Intelligence Examination

DELTA 1

FOR GRADES 1–3

Arranged and standardized by M. E. Haggerty, University of Minnesota

Used in the Virginia School Survey

My name is _____ I am a _____
First name Last name Write boy or girl

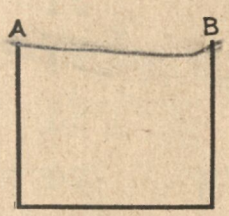
This is the _____ day of _____ 19____ I am _____ years old.

My next birthday will be _____ 19____ I am in _____ half of Grade _____

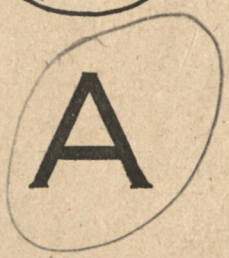
The name of my school is _____ The name of my city (county) is _____

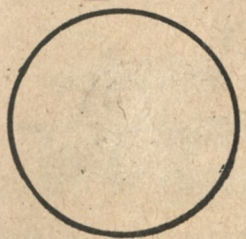
The name of my state is _____

EXERCISE 1

1 

2 

3 

4 

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EXERCISE 12

If the two words mean the same, put an **S** between them.
If they mean as different as can be, put a **D** between them.

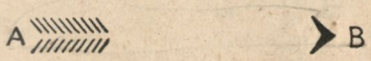
1	big ____ large	1
2	good ____ bad	2
3	go ____ leave	3
4	quiet ____ still	4
5	wet ____ dry	5
6	high ____ low	6
7	sad ____ sorry	7
8	wide ____ broad	8
9	run ____ stand	9
10	near ____ close	10
11	sweet ____ sour	11
12	happy ____ cheerful	12
13	up ____ down	13
14	give ____ take	14
15	fear ____ fright	15
16	rude ____ polite	16
17	timid ____ shy	17
18	beg ____ plead	18
19	friend ____ enemy	19
20	order ____ command	20
21	begin ____ commence	21
22	advance ____ retreat	22
23	gradual ____ sudden	23
24	climb ____ ascend	24
25	accept ____ reject	25

Score ----------

EXERCISE 2

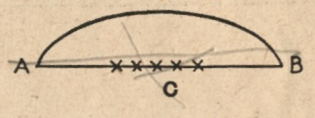
1 

2 

3 

4 **1**

5 

6 

7 

8 

9 

10 ☐ ☐ ☐ ☐ ☐

Score _____

1 small____little

2 no____yes

3 fall____drop

4 leap____jump

5 black____white

6 go____come

7 hit____strike

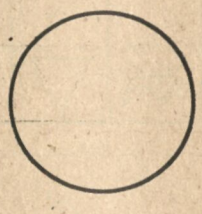
8 flower____blossom

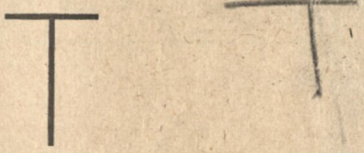
9 sick____well

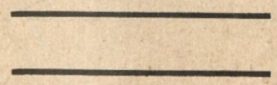
10 hot____warm

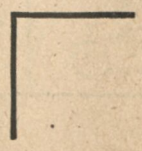
EXERCISE 3

1 A——————B C D

2  A

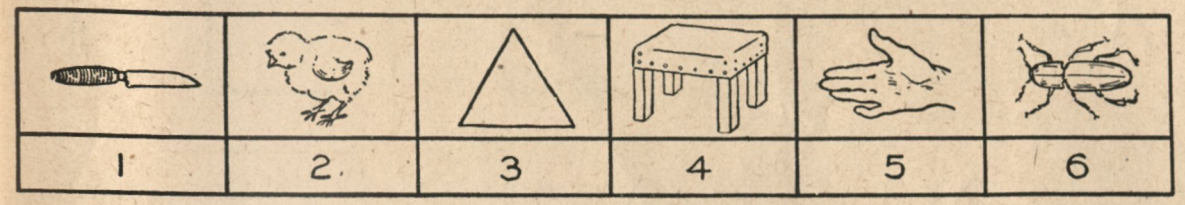
3 

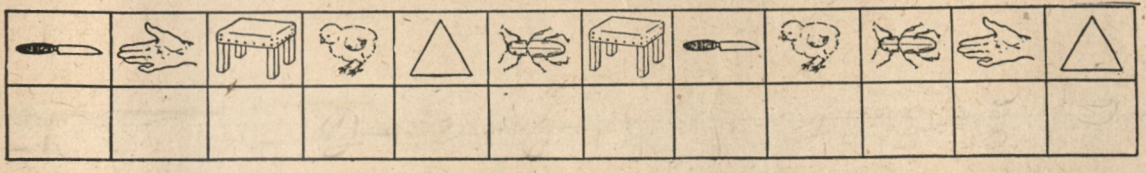
4 

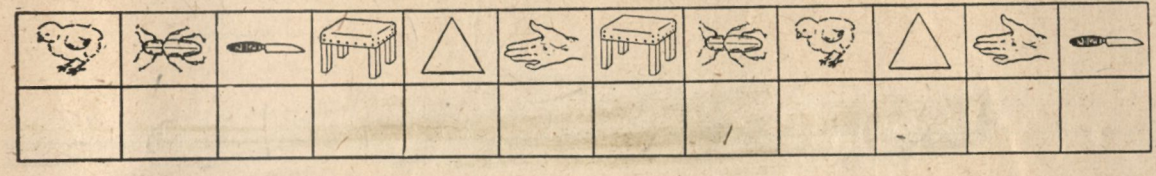
5 

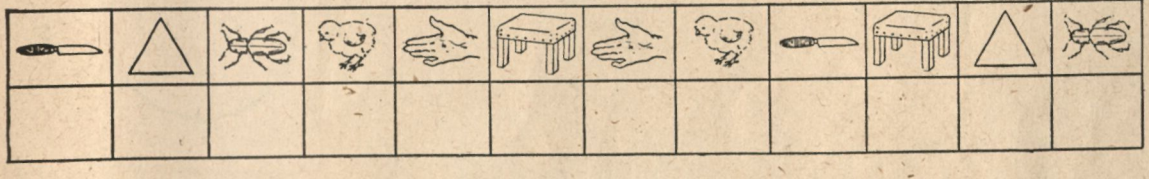
EXERCISE 10

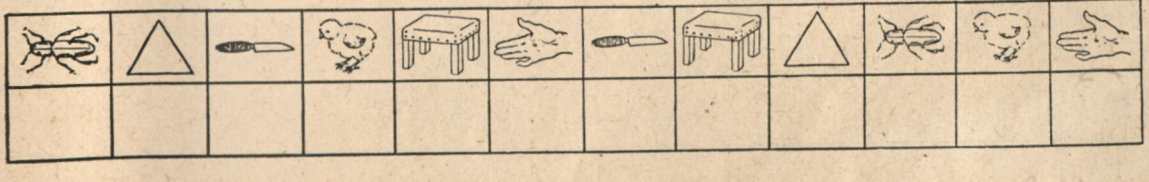
Put the right figure under every picture.



1 

2 

3 

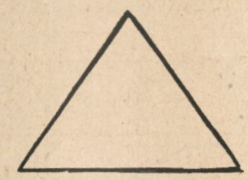
4 

*Score*_____

EXERCISE 4

Copy these pictures.

1



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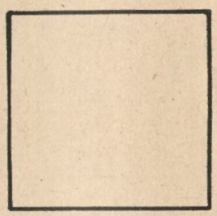

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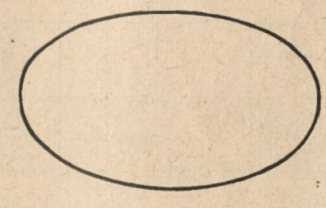

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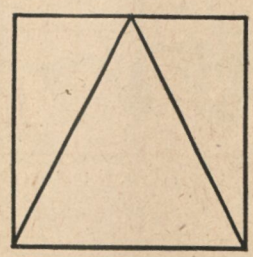
5



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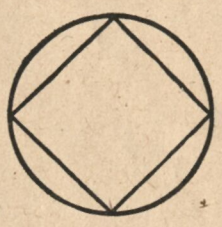

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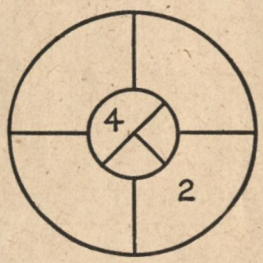

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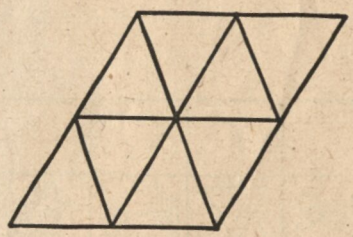

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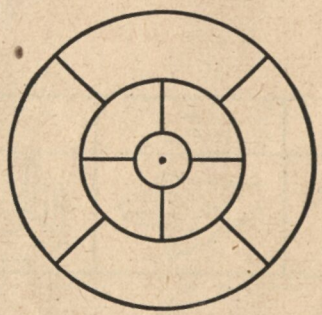

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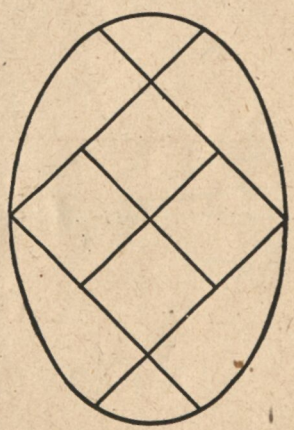
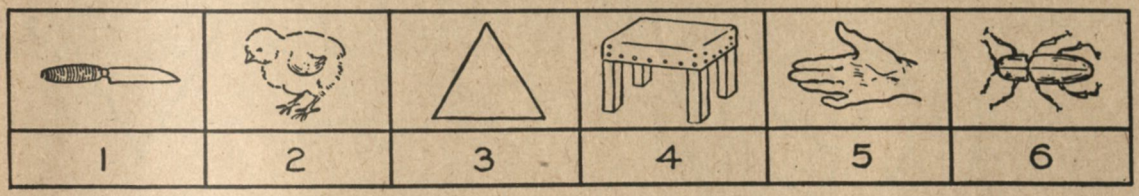
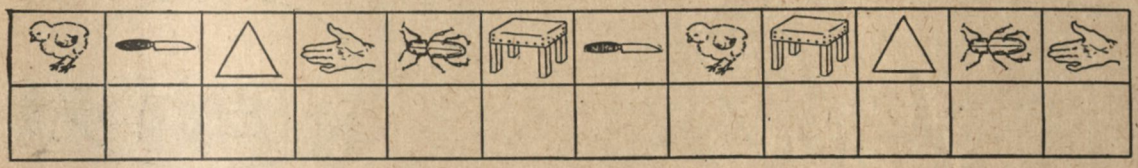


*Score*_____

EXERCISE 9



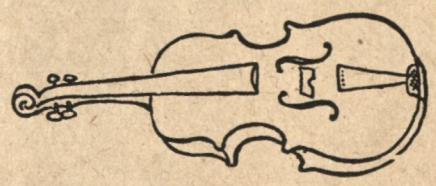


EXERCISE 5

1

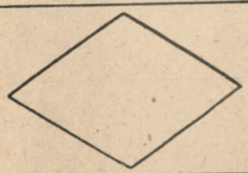
2

3



EXERCISE 8

If the two pictures are the same, put an S between them.
If they are different, put a D between them.

1		———		1
2		———		2
3		———		3
4		———		4
5		———		5
6		———		6
7		———		7
8		———		8
9		———		9
10		———		10

*Score*_____

EXERCISE 6

Mark in each picture what is left out.

1

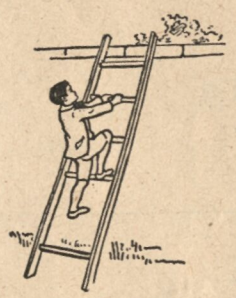
2

3

4

5

6



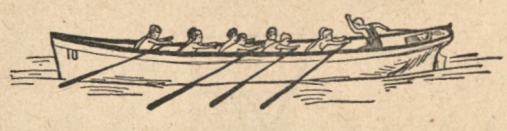
7

8

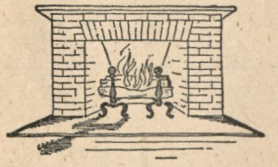
9

10

11



12



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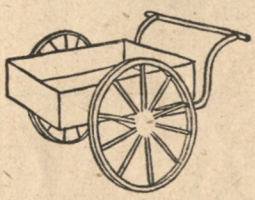

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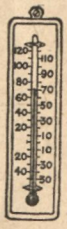
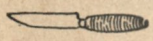


16

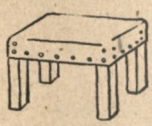
*Score*_____

EXERCISE 7

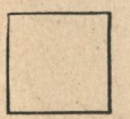
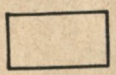
1  ——— 

2  ——— 

3  ——— 

4  ——— 

5  ——— 

6  ——— 

7  ——— 

Haggerty Intelligence Examination

DELTA 2

FOR GRADES 3-9

Arranged and standardized by M. E. Haggerty, University of Minnesota

An adaptation of the Army Intelligence Examinations. Used in the Virginia School Survey

---

My name is..... I am a.....
First name Last name Write boy or girl

This is the.....day of.....19.....I am.....years old.

My next birthday will be.....19.....I am in.....half of Grade.....

The name of my school is..... The name of my city (county) is.....

The name of my state is.....

Do not turn this page until you are told to do so.

(To be read silently by pupils while examiner reads aloud)

This little book contains some exercises which will show how well you can do certain things. Some of the things are very easy and some are very hard. There are six exercises in all. You will be shown them one at a time and will finish each one before you see the next one. Do not turn any page until you are told to do so. As soon as you turn the page, lift your pencil, with your elbow on your desk, and do not put your pencil down until we have read the instructions and until I say, GO!

Now turn the page to Exercise 1.

Exercise	1	2	3	4	5	6	Total
Score							

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EXERCISE 6

Look at this sentence: People hear with the eyes — ears — nose — mouth.
The correct word is "ears," because it makes the truest sentence. In each of the sentences below you have four choices for the last word. Only one of them is correct. In each sentence draw a line under the one of these four words that makes the truest sentence. If you cannot be sure, guess. The first one is already marked as it should be.

France is in Europe Asia Africa Australia.

1 The apple grows on a shrub vine tree bush 1
2 The day before Thursday is Tuesday Wednesday Friday Saturday 2
3 America was discovered by Drake Hudson Cabot Columbus 3
4 The first President of the United States was Lincoln Washington Jackson Garfield 4
5 The capital of the United States is New York Chicago Washington New Orleans 5

6 Wool is obtained from the ocean the ground a plant an animal 6
7 The Amazon is a river city mountain country 7
8 Boston is in Connecticut Rhode Island Maine Massachusetts 8
9 The capital of France is London Rome Paris Berlin 9
10 The second month before July is August May June April 10

11 The number of days in a year is 144 287 365 412 11
12 The Leghorn is a kind of cow horse granite fowl 12
13 Charlie Chaplin is noted as an actor soldier preacher physician 13
14 The commander of the allied armies was Wilson Foch Lloyd George Hindenburg 14
15 Moses was a great Greek Roman Japanese Jew 15

16 Shakespeare is noted as a soldier statesman writer scientist 16
17 A pound of tea usually costs about 10 cts. 5 cts. $2.00 50 cts. 17
18 Ivory is obtained from elephants oysters mines reefs 18
19 The Durham is a kind of horse cow goat sheep 19
20 Indigo is a food drink color fabric 20

21 It is usually coldest at sunrise sunset noon midnight 21
22 The U. S. School for army officers is at Annapolis West Point New Haven St. Paul 22
23 Leap year comes every two years four years six years eight years 23
24 Rubber is obtained from ore petroleum trees hides 24
25 Darwin was most famous in literature politics war science 25

26 The battle of Lexington was fought in 1620 1775 1812 1864 26
27 Combustible things will rip fight burn break 27
28 Emeralds are usually red blue yellow green 28
29 Diamonds are obtained from mines reefs elephants oysters 29
30 Turpentine is obtained from rivers rocks trees animals 30

31 The saber is a kind of musket sword cannon pistol 31
32 The larynx is in the head neck shoulder abdomen 32
33 Larceny is a term used in medicine theology law pedagogy 33
34 Alfalfa is a kind of corn hay print rice 34
35 Maroon is a kind of food fabric drink color 35

36 The clarinet is used in music stenography lithography drawing 36
37 The mimeograph is a kind of typewriter copying machine phonograph pencil 37
38 The constitution of the league of nations was written in France Russia England Germany 38
39 Monogamy is a term relating to electricity business the family manufacture 39
40 A five-sided figure is called a scholium pentagon parallelogram trapezium 40

Score .....

EXERCISE 1

DIRECTIONS.

1. Read this question: Do cats see? NO YES
   The right answer is Yes; so a line is drawn under Yes.
2. Read the next question: Is coal white? NO YES
   The right answer is No; so a line is drawn under No.

Below are a great many more questions. Read them carefully, one at a time, and draw a line under the right answer. When you are not sure, guess.

---

1. Do dogs run? YES NO
2. Can a doll sing? YES NO
3. Does the sun shine? YES NO
4. Do men drink water? YES NO
5. Are all apples red? YES NO
6. Does a table have legs? YES NO
7. Are eggs good to eat? YES NO
8. Are two more than four? YES NO
9. Are children's dresses always blue? YES NO
10. Are houses sometimes made of bricks? YES NO
11. Do soldiers ever live in camps? YES NO
12. Does it rain every morning? YES NO
13. Do all travelers have companions? YES NO
14. Is south different from north? YES NO
15. Do pupils attend school at midnight? YES NO
16. Does lightning sometimes occur at night? YES NO
17. Do guards ever take captives? YES NO
18. Are all barbers wealthy persons? YES NO
19. Does the country need patriotic citizens? YES NO
20. Should school teachers be continually tardy? YES NO
21. Are all swimming animals quadrupeds? YES NO
22. Is the development of trees ever stunted? YES NO
23. Is electricity used only for lighting? YES NO
24. Do all foreigners make good citizens? YES NO
25. Is the government of colonies important? YES NO
26. Are future events definitely predictable? YES NO
27. Is hospitality likely to be appreciated? YES NO
28. Are missionaries ever persecuted by natives? YES NO
29. Is a faithless commander deserving of reward? YES NO
30. Do governors ever issue proclamations? YES NO
31. Does the ascent of a mountain conduce to fatigue? YES NO
32. Do arguments arise over political questions? YES NO
33. Should a sentinel's challenge be ignored? YES NO
34. Are integrity and obedience virtues? YES NO
35. Are historians infallible? YES NO
36. Are "patriotism" and "elocution" synonyms? YES NO
37. Does allegiance imply loyalty? YES NO
38. Is surgery the vocation of diplomats? YES NO
39. Are all lunatics in penitentiaries? YES NO
40. Are judicial decisions ever enforced? YES NO

*Number right*_____
*Number wrong*_____
Number right **minus** *Number wrong*_____ (*Score*)

EXERCISE 5

This is a test of common sense. Below are sixteen questions. Three answers are given to each question. You are to look at the answers carefully; then make a cross in the square before the best answer to each question, as in the sample:

SAMPLE

Why do we use stoves? Because
- ☐ they look well
- ☒ they keep us warm
- ☐ they are black

Here the second answer is the best one and is marked with a cross. Begin with No. 1 and keep on until time is called.

---

1 Cats are useful animals, because
- ☐ they catch mice
- ☐ they are gentle
- ☐ they are afraid of dogs

2 Why are chairs made of wood? Because
- ☐ wood is cheap and light
- ☐ wood burns
- ☐ wood is easily broken

3 A house is better than a tent, because
- ☐ it costs more
- ☐ it is more comfortable
- ☐ it is made of wood

4 Shoes are made of leather, because
- ☐ it is tanned
- ☐ it is tough, pliable, and warm
- ☐ it can be blackened

5 Why judge a man by what he does rather than by what he says? Because
- ☐ what a man does shows what he really is
- ☐ it is wrong to tell a lie
- ☐ a deaf man cannot hear what is said

6 If you were asked what you thought of a person whom you didn't know, what should you say?
- ☐ I will go and get acquainted
- ☐ I think he is all right
- ☐ I don't know him and can't say

7 Why does it pay to get a good education? Because
- ☐ it makes a man more useful and happy
- ☐ it makes work for teachers
- ☐ it makes demand for buildings for schools and colleges

8 If the grocer should give you too much money in making change, what is the right thing to do?
- ☐ buy some candy from him with it
- ☐ give it to the first poor man you meet
- ☐ tell him of his mistake

☞ Go to No. 9 above

9 If you are lost in a forest in the daytime, what is the thing to do?
- ☐ hurry to the nearest house you know of
- ☐ look for something to eat
- ☐ use the sun or a compass for a guide

10 The feathers on a bird's wings help him to fly, because they
- ☐ make a wide, light surface
- ☐ keep the air off his body
- ☐ keep the wings from cooling off too fast

11 Why are criminals locked up?
- ☐ to protect society
- ☐ to get even with them
- ☐ to make them work

12 Why should all parents be made to send their children to school? Because
- ☐ it prepares them for later life
- ☐ it keeps them out of mischief
- ☐ they are too young to work

13 Why do inventors patent their inventions? Because
- ☐ it gives them control of their inventions
- ☐ it creates a greater demand
- ☐ it is the custom to get patents

14 A train is harder to stop than an automobile, because
- ☐ it is longer
- ☐ it is heavier
- ☐ the brakes are not so good

15 We see no stars at noon, because
- ☐ they have moved around to the other side of the earth
- ☐ they are so much fainter than the sun
- ☐ they are hidden by the sun

16 Why is it colder nearer the poles than near the equator? Because
- ☐ the poles are always farther from the sun
- ☐ the sunshine falls obliquely at the poles
- ☐ there is more ice at the poles

*Score*_____

EXERCISE 2

Get the answers to these problems as quickly as you can. Use the side of this page to figure on if you need to.

SAMPLES
1 How many are 5 men and 10 men?---Answer (15)
2 If one pencil costs 5 cents, what will 4 pencils cost?---Answer (20)

1 How many are 30 men and 7 men?---Answer ( )
2 A boy had 10 cents and spent 4 cents. How many cents had he left?---Answer ( )
3 If you save $7 a month for 4 months, how much will you save?---Answer ( )
4 If 24 men are divided into groups of 8, how many groups will there be?---Answer ( )
5 A boy had 12 marbles. He bought 3 more, and then lost 6. How many marbles did he have left?---Answer ( )
6 Mary was carrying a dozen eggs in her apron. Two eggs fell out and were broken. How many eggs had she left?---Answer ( )
7 An army advanced 5 miles and retreated 3 miles. How far was it then from its first position?---Answer ( )
8 How many hours will it take to drive a team 66 miles at the rate of 6 miles an hour?---Answer ( )
9 How many apples can you buy for 50 cents at the rate of 2 for 5 cents?---Answer ( )
10 A regiment marched 40 miles in five days. The first day it marched 9 miles, the second day 6 miles, the third 10 miles, the fourth 8 miles. How many miles did it march the last day?---Answer ( )
11 If you buy two writing tablets at 7 cents each and a book for 65 cents, how much change should you get from a two-dollar bill?---Answer ( )
12 If there are 5 school days in a week, 4 weeks in a month, and 9 months in a school year, how many school days are there in a school year?---Answer ( )
13 A dealer bought some mules for $800. He sold them for $1000, making $40 on each mule. How many mules were there?---Answer ( )
14 A rectangular bin holds 400 cubic feet of corn. If the bin is 10 feet long and 5 feet wide, how deep is it?---Answer ( )
15 If it takes 6 men 3 days to dig a 180-foot drain, how many men are needed to dig it in half a day?---Answer ( )
16 A soldier spent one eighth of his money for post cards and four times as much for a box of letter paper, and then had 90 cents left. How much money did he have at first?---Answer ( )
17 If $3\frac{1}{2}$ tons of coal cost $21, what will $5\frac{1}{2}$ tons cost?---Answer ( )
18 A ship has food to last her crew of 500 men 6 months. How long would it last 1200 men?---Answer ( )
19 If a man runs a hundred yards in 10 seconds, how many feet does he run in a fifth of a second?---Answer ( )
20 A submarine makes 8 miles an hour under water and 15 miles on the surface. How long will it take to cross a 100-mile channel, if it has to go two fifths of the way under water?---Answer ( )

*Score*_____

EXERCISE 4

Look at these two words: little—small same—opposite

They mean the same thing; so a line is drawn under same.

Now look at the next two words: good—bad same—opposite

These two words do not mean the same. They mean just the opposite; so a line is drawn under opposite.

Now look at all the other words on this page. If the words of a pair mean the same or nearly the same, draw a line under same. If they mean the opposite or nearly the opposite, draw a line under opposite. If you cannot be sure, guess.

1	no—yes	same—opposite	1
2	big—large	same—opposite	2
3	leap—jump	same—opposite	3
4	day—night	same—opposite	4
5	cold—hot	same—opposite	5
6	wet—dry	same—opposite	6
7	in—out	same—opposite	7
8	wide—broad	same—opposite	8
9	bitter—sweet	same—opposite	9
10	slim—slender	same—opposite	10
11	go—leave	same—opposite	11
12	begin—commence	same—opposite	12
13	take—accept	same—opposite	13
14	find—lose	same—opposite	14
15	joy—happiness	same—opposite	15
16	asleep—awake	same—opposite	16
17	command—obey	same—opposite	17
18	beg—entreat	same—opposite	18
19	appeal—beseech	same—opposite	19
20	legible—readable	same—opposite	20
21	ancient—modern	same—opposite	21
22	lax—strict	same—opposite	22
23	acquire—lose	same—opposite	23
24	sacred—hallowed	same—opposite	24
25	compute—calculate	same—opposite	25
26	repress—restrain	same—opposite	26
27	bestow—confer	same—opposite	27
28	amenable—tractable	same—opposite	28
29	avert—prevent	same—opposite	29
30	contradict—corroborate	same—opposite	30
31	dearth—scarcity	same—opposite	31
32	prefix—append	same—opposite	32
33	amiable—surly	same—opposite	33
34	docile—refractory	same—opposite	34
35	celibate—married	same—opposite	35
36	extinct—extant	same—opposite	36
37	pertinent—relevant	same—opposite	37
38	diatribe—invective	same—opposite	38
39	apathy—indifference	same—opposite	39
40	fallacy—verity	same—opposite	40

*Number right*_____

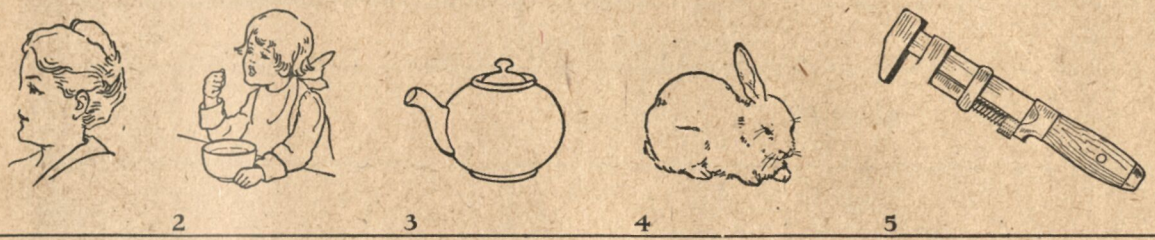
*Number wrong*_____

Number right **minus** *Number wrong*_____ (*Score*)

EXERCISE 3

Each of these pictures has something missing, and you are to put in with your pencil the missing part. Look at the first one. It is the picture of a boy's face, but it has no mouth. Now with your pencil mark in a mouth. The woman has no eye. Give her an eye. The other pictures are to be finished in the same way.

A B



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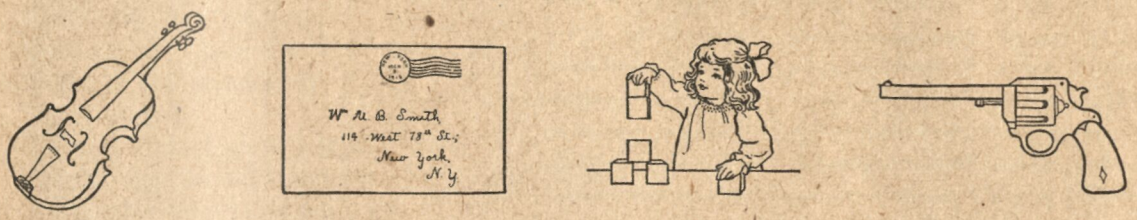

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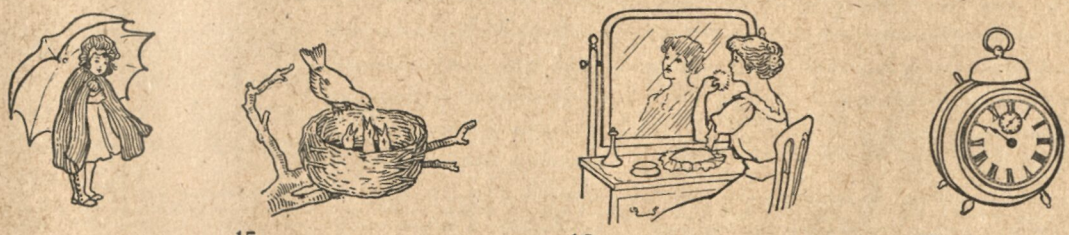
10 11 12 13



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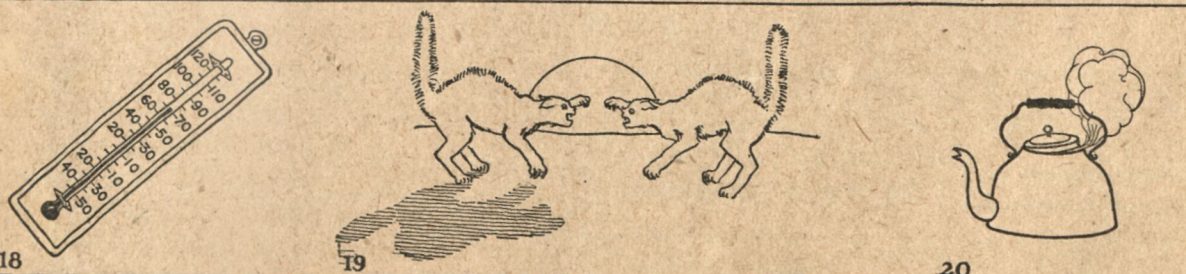

18 19 20

Score.....

Name Address Birthplace Birthdate

Age(months and years) Date History Taken

Weight Height

FAMILY HISTORY

	Mother	Father	Guardian
Name			
Occupation			
Economic status			
Place of birth			
State of health			
Divorced			
Education(extent)			
Hearing handicaps			
Speech handicaps			
Emotional temperament			
Languages			
Attitude toward children			
Social activities			
Lefthandedness			
Hobbies			

Remarks:

Brothers and Sisters:

Names and ages

Education(extent)

Speech handicaps

Emotional temperament Intelligence

Special abilities Special disabilities

Remarks:

EDUCATIONAL HISTORY

Intelligence test scores Special handicaps

Attitude toward school Attitude toward teachers

Subjects liked Subjects disliked

Grades skipped Grades repeated

Special aptitudes

How school vacations are spent Personal problems

Remarks

HEALTH HISTORY

Condition at birth: normal_____abnormal_____
Mode of nursing: breath_____bottle_____
Age weaned__age of self feeding__age of first teeth_____
Crawling age_____Walking age___Talking age___Handedness_____

Disease:
Types_____,_____,_____,_____
Duration_____,_____,_____,_____
Dates_____,_____,_____,_____
Results_____

Physical injuries_____
Food aversions_____State of nourishment_____
Hearing losses_____Nasal obstructions_____
Vision_____
Tongue-tie_____Type of bite(over, under, open)_____
Condition of teeth_____Condition of throat_____
Sleeping conditions at home(up to present)_____
Mannerisms and nervous disturbances_____Fears_____
Nailbiting_____Sleeplessness__Nightmares___Twitching_____
Uses coffee___tea___tobacco_____other stimulants_____
Emotional temperament_____
Muscular coordiantion_____

SPEECH HISTORY

Age of onset of defect_____
Who first noticed defect?_____
What sort of treatment has been given?_____
By whom?_____
Has defect become better or worse?_____
What things have seemed to affect the severity of the defects?_____

Speech Diagnosis and Criticism Charts:

Personal appearance_____facial expressions_____
gestures_____poise_____voice_____projection_____
rate___pitch strain_____nasality___denasalization_____
_____
dull hearing_____indistinctness___slurring_____
tightened jaw_____sounds added_____ng clicks_____
sigmatism(s defects)_____
lalling (l and r defects)_____foreignisms_____
stuttering_____cluttering_____dialectal distortions___
_____

Remarks_____

PERSONALITY TEST

Name_____Age___Sex_____Grade_____

1. Do you like to play by yourself better than with other children?.....Yes No
2. Do other children let you play with them?.....Yes No
3. Did you ever run away from home?.....Yes No
4. Did you ever want to run away from home?.....Yes No
5. Do you think people like you as much as they do other people?.....Yes No
6. Does it make you uneasy to cross a bridge over water?.....Yes No
7. Do people find fault with you much?.....Yes No
8. Are you afraid of water?.....Yes No
9. Are you afraid during a thunderstorm?.....Yes No
10. Do you feel like jumping off when you are on a high place?.....Yes No
11. Are you afraid of the dark?.....Yes No
12. Are you frightened in the middle of the dark?...Yes No
13. Do you talk in your sleep?.....Yes No
14. Do you walk in your sleep?.....Yes No
15. Are you troubled about dreams about your play...Yes No
16. Do you ever have the same dream over and over?..Yes No
17. Do you have the habit of picking your fingers or nose?.....Yes No
18. Can you sit still without fidgeting?.....Yes No
19. Do you break and tear and spoil things more

than other people?.....Yes No

20. Are you usually happy?.....Yes No

21. Do you stumble and fall over things more than other people?.....Yes No

22. Do you ever feel that nobody loves you?.....Yes No

23. Do you ever wish you were dead?.....Yes No

24. Did you ever have a real fight?.....Yes No

25. Do you like to tease people till they cry?.....Yes No

26. Do you ever feel a certain pleasure in hurting a person or an animal?.....Yes No

27. Can you stand pain as quietly as other people?...Yes No

28. Do you have a harder time to get along in school than other children do?.....Yes No

29. Do you feel that your parents are not really your own?.....Yes No

30. Do you ever feel that you were falling just before going to sleep?.....Yes No

31. Are you usually on time?.....Yes No

32. Have you fainted away?.....Yes No

33. Does your family treat you right?.....Yes No

34. Do your teachers generally treat you right?.....Yes No

35. Do you feel that someone is trying to do you harmYes No

36. Do you have a strong desire to steal something?..Yes No

37. Do you think you have more fears than most peopleYes No

38. Do you make friends easily?.....Yes No

39. Do you get tired of people easily?.....Yes No

40. Do you have a strong desire to set something a fire?.....Yes No

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